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Author(s): Garcia, Kari L. M
Holtkamp, David M.
McGehee, Ellen D.
Towery, Kenneth R.
Honig, Kristen Ann

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An Evaluation of Cold War Radiation Exposure Facilities at Technical Area 54 West

Los Alamos National Laboratory

LANL Fiscal Year 2015 Footprint Reduction

Historic Building Survey Report No. 334

Survey No. 1155

Los Alamos
NATIONAL LABORATORY
EST. 1943

Prepared for: the U.S. Department of Energy/National Nuclear Security Administration, Los Alamos Field Office

Prepared by: **Kari L. M. Garcia**, Cultural Resources Manager, LANL Environmental Stewardship Services (ENV-ES)

David M. Holtkamp, Consulting Cultural Resources Manager, Compa Industries, Inc.

Ellen D. McGehee, Historian and Historic Buildings Manager, LANL Environmental Stewardship Services (ENV-ES)

Ken Towery, Architect, LANL Infrastructure Planning (OI-IP)

Kristen Honig, LANL Infrastructure Planning (OI-IP)

EXECUTIVE SUMMARY

The United States Department of Energy/National Nuclear Security Administration, Los Alamos Field Office proposes to decontaminate, decommission, and ultimately demolish two Cold War-era properties located within Technical Area (TA) 54 at Los Alamos National Laboratory (LANL or the Laboratory). These buildings, located in an area known as TA-54 West, have been identified as excess property, and their demolition is being planned as part of LANL's Footprint Reduction Program activities during fiscal year 2015.

In compliance with Section 106 and Section 110 of the *National Historic Preservation Act*, Los Alamos National Security, LLC cultural resources staff has completed the evaluation of a small group of buildings associated with Cold War radiation exposure experiments for inclusion in the National Register of Historic Places (Register). This set of properties includes the two buildings proposed for demolition, TA-54-1004 and TA-54-1009, and three additional buildings not scheduled for demolition, TA-54-1001, TA-54-1002, and TA-54-1003. Appendix A includes LANL historic building inventory forms for all five properties. Of the five evaluated properties, Buildings TA-54-1001, TA-54-1002, and TA-54-1003 are considered Register-eligible based on the findings in this assessment report. These three buildings are integral to the history of the biomedical research program at the Laboratory during the Cold War. Buildings TA-54-1004 and TA-54-1009 are determined not eligible according to the findings in this report. These two buildings are not integral to the biomedical research program and are less than 50 years old. In addition to Register eligibility, historic properties at TA-54 West were assessed for preservation, adaptive reuse, and interpretive potential. The three Register-eligible properties have been identified as unique Cold War facilities that should be managed as activity facilities or identified for long-term adaptive reuse because they are significant properties representing bioscience and biotechnology research at LANL.

The State Historic Preservation Officer is requested to concur with the eligibility determinations contained in this report for the five properties at TA-54 West. This report serves as notification that the two non-eligible properties described in this report, TA-54-1004 and TA-54-1009, will be demolished.

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INTRODUCTION

The United States (U.S.) Department of Energy/National Nuclear Security Administration, Los Alamos Field Office proposes to demolish two Cold War-era properties during fiscal year (FY) 2015 as part of the Los Alamos National Laboratory (LANL or the Laboratory) Footprint Reduction Program activities.

Historic Property Eligibility Assessment

In compliance with Section 106 and Section 110 of the National Historic Preservation Act, this report contains documentation regarding the National Register of Historic Places (Register) eligibility determinations of a small group of buildings associated with Cold War animal exposure experiments located at Technical Area (TA) 54. This set of properties includes two buildings proposed for demolition, TA-54-1004 and TA-54-1009, and three additional buildings not slated for demolition, TA-54-1001, TA-54-1002, and TA-54-1003. Work processes carried out in this area of TA-54 (known as TA-54 West) supported Cold War era biomedical research in dosimetry and the genetic effects of radiation exposure. Historical context information about activities at TA-54 West, property descriptions, and determinations for Register eligibility are included in this report. A discussion of the multiple property method used to evaluate these properties is also included. Appendix A includes historic building inventory forms for the five buildings.

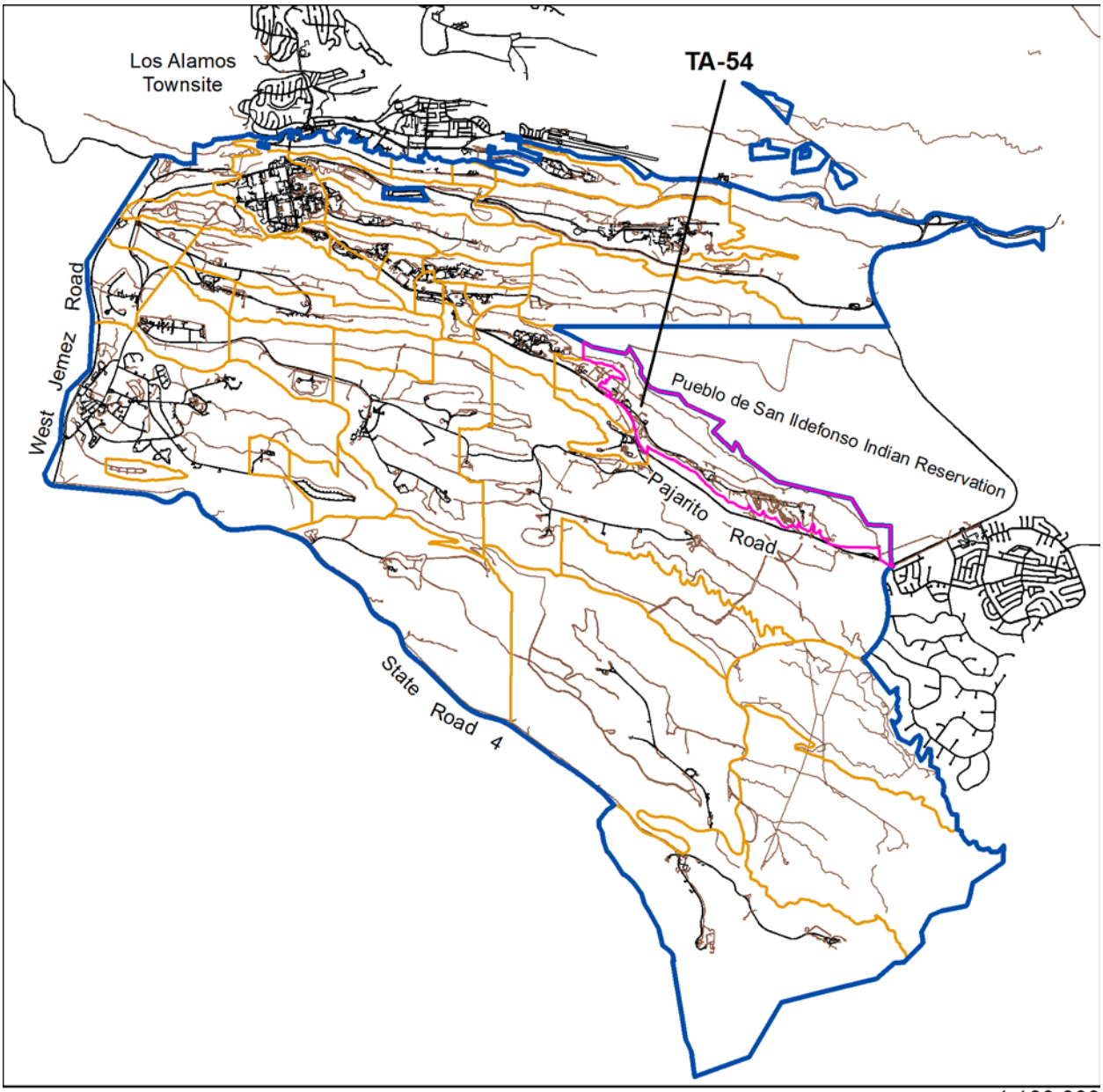
Survey Methods

Some of the initial surveys of properties located at TA-54 were conducted in 2006 by Sheila A. McCarthy, Historical Architect, Benchmark Consulting Group. Follow-up survey and documentation work was conducted in 2014 by Ken Towery, Architect, and Kristen Honig, LANL Infrastructure Planning Group, Kari Garcia and Ellen McGehee, LANL Environmental Stewardship Services Group, and David M. Holtkamp, Compa Industries Inc. The building surveys were accomplished by conducting field visits to the buildings at TA-54 (Maps 1 and 2). Architectural and engineering features of the properties were documented and photographs were taken. LANL records research was also conducted.

HISTORICAL OVERVIEW

Early Cold War Era (1946–1956)

The future of the early Laboratory was in question after the end of World War II (WWII). Many scientists and site workers left Los Alamos and went back to their pre-war lives. Norris Bradbury was appointed director of the Laboratory following J. Robert Oppenheimer's return to his pre-WWII duties. Bradbury felt that the nation needed "a laboratory for research into military applications of nuclear energy" (LANL 1993). In late 1945, General Groves directed Los Alamos to begin stockpiling and developing additional atomic weapons (Gosling). Post-war weapon assembly work was now tasked to Los Alamos's Z Division, which had been relocated to an airbase (now Sandia National Laboratories) in nearby Albuquerque, New Mexico (Gosling 2001).



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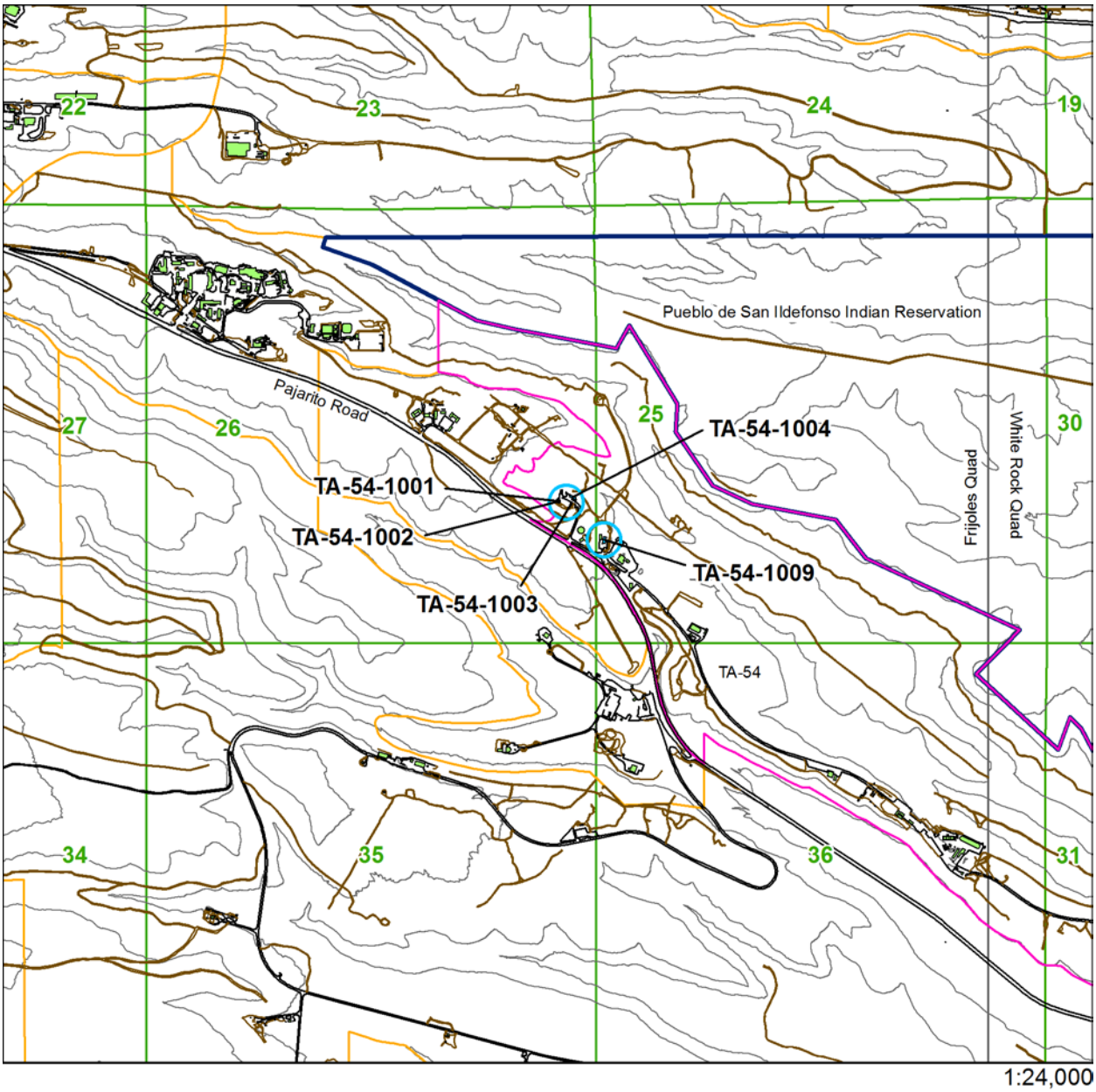
Technical Area 54
Technical Areas
LANL Boundary
Dirt Roads
Paved Roads

LANL Boundary and TA-54

Map 1



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Buildings Being Evaluated
Buildings/Structures
Technical Area 54
Technical Areas
LANL Boundary
Dirt Roads
Paved Roads
100 Ft. Countour
Township, Range, Sections
USGS 7.5" Quads

TA-54 West Evaluated Buildings

Map 2

In 1946, Los Alamos became involved in "Operation Crossroads," the first of many atmospheric tests in the Pacific. Later, also in 1946, the U.S. Atomic Energy Commission (AEC) was established to act as a civilian steward for the new atomic technology born of WWII. The AEC formally took over the Laboratory in 1947, making a commitment to retain Los Alamos as a permanent weapons facility.

With the beginning of the Cold War—the term "Cold War" was first coined in 1947—weapons research once again became a national priority. Weapons research at Los Alamos was spearheaded by Edward Teller and Stanislaw Ulam and focused on the development of the hydrogen bomb, the feasibility of which had been discussed seriously at Los Alamos as early as 1946. The simmering Cold War came to a full boil in late 1949 with the successful test of "Joe I," the Soviet Union's first atomic bomb. In January 1950, President Truman approved the development of the hydrogen bomb. Truman's decision led to the remobilization of the country's weapons laboratories and production plants. The year 1950 also marked the initial meeting of Los Alamos's "Family Committee"—a committee tasked with developing the first two thermonuclear devices (LANL 2001). In 1951, the Nevada Proving Ground was established and the first Nevada atmospheric test, "Able," was conducted. In the same year, Los Alamos directed "Operation Greenhouse" in the Pacific and successfully conducted both the first thermonuclear test, "George," and the first thermonuclear "boosted" test, "Item." In 1952, the first thermonuclear bomb, known as "Mike," was detonated at Enewetak Atoll in the Pacific (LANL 1993).[1] The Soviet Union responded with a successful fusion demonstration in August 1953, followed by a test of a hydrogen bomb in 1955. The arms race was on. By 1956, Los Alamos had successfully tested a new generation of high explosives (plastic-bonded explosives) and had begun to make improvements to the primary stage of a nuclear weapon (LANL 2001).

Although weapons research and development has always played a major role in the history of LANL, other key themes for the years 1942–1956 include supercomputing advancements, fundamental biomedical and health physics research, high explosives research and development, reactor research and development, pioneering physics research, and the development of the field of high-speed photography (McGehee and Garcia 1999). The Early Cold War era at Los Alamos ended in 1956, a date that marks the completion of all basic nuclear weapons design at LANL. Later research at Los Alamos focused on the engineering of nuclear weapons to fit specific delivery systems. The year 1956 was also the last year that Los Alamos was a closed facility—the gates into the Los Alamos townsite came down in 1957.

Late Cold War Era (1956–1990)

The Late Cold War era saw the Laboratory's continued support of the atmospheric testing programs in the Pacific and at the Nevada Test Site. In 1957, the first of many underground tests in Nevada was conducted, and in 1963, the Limited Test Ban Treaty was signed, which banned atmospheric testing and also nuclear weapons tests in the oceans and space (U.S. DOE 2000). Defense mission undertakings during this time included treaty and test ban verification programs (such as the satellite detection of nuclear explosions), research and development of space-based weapons, and continued involvement with stockpile stewardship issues. Non-weapons undertakings supported nuclear medicine, genetic studies, National Aeronautics and Space Administration collaborations, superconducting research, contained fusion reaction research, and other types of energy research (McGehee and Garcia 1999).

[1] A better understanding of the Marshall Islands language has permitted a more accurate transliteration of Marshall Island names into English. Enewetak is now the preferred spelling (formerly Eniwetok).

The Cold War Ends

The Cold War ended in the early 1990s. Its demise was marked by START, the Strategic Arms Reduction Treaty (signed by President George H. W. Bush, and Soviet President, Mikhail Gorbachev), and by President Bush's announcement in September 1991 of a unilateral decision to decrease significantly the U.S. nuclear weapon stockpile. That announcement was followed in June 1992 by an agreement between President Bush and Russian president Boris Yeltsin to reduce each country's nuclear arsenal gradually over the next decade. The arms race that had lasted nearly half a century was over (Machen et al. 2010).

TECHNICAL AREA DESCRIPTION

TA-51 Environmental Research Site and TA-54 Waste Disposal Site Historical Background

TA-54 West, historically part of TA-51 or Environmental Research Site, was established in the early 1960s. TA-51was first used by the Laboratory's Biomedical Research Group (H-4) during the Cold War years to support biomedical research conducting whole-animal studies on mammalian radiobiology (i.e., the effects of radiation of mammals) (Richmond and Voelz 1973). This research was conducted from the 1960s through the 1970s.

In 1980 the group's focus transitioned when the Experimental Engineering Test Facility was established at TA-51, west of the Radiation Exposure Facility, which supported research in developing effective techniques for the burial of wastes in semi-arid climates (LANL 1986a). During the 1980s operations at the Radiation Exposure Facility shifted focus to non-radiation (i.e., oil shale and nitrogen oxides) exposure research on animals (LANL 1986a, 1986b).

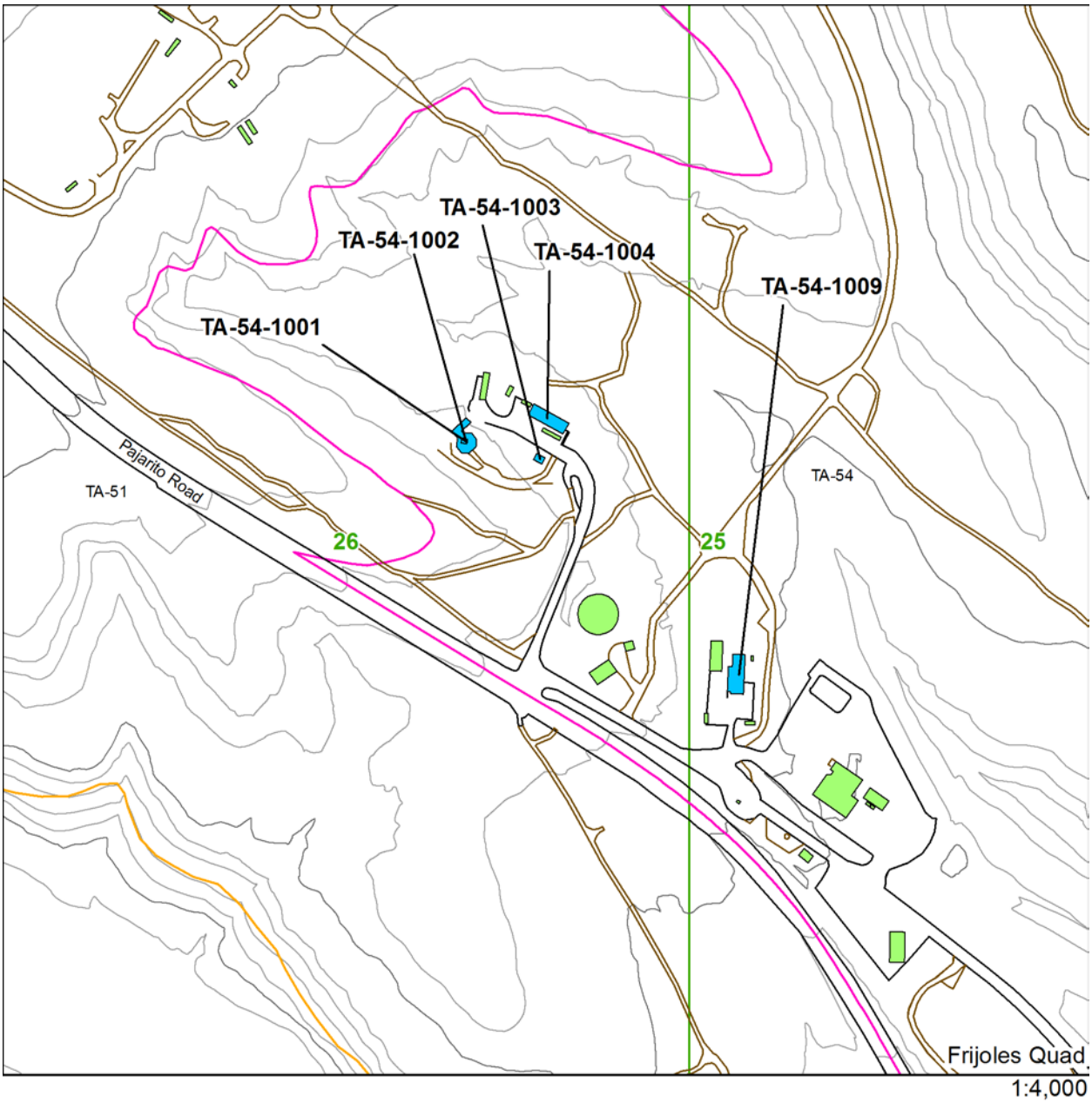
In 1990 the portion of TA-51encompassing the Radiation Exposure Facility (TA-54-1001, -1002, and -1003) constructed in 1962, and the animal holding facilities (TA-54-1004, and -1009) constructed in 1967 and 1974 respectively, became designated as TA-54 West, part of TA-54 Waste Disposal Site (Map 3). TA-54 was established in the early 1950s for disposal of radioactive and nonradioactive wastes within several material disposal areas and has continued these operations through to the present (LANL 1992). This original portion of the technical area is located in the eastern portion of present-day TA-54.

LANL Cold War Context and Themes at TA-54 West

Key historical themes have been identified in a LANL Cold War context report produced as part of the documentation of the former Laboratory Administration Building (SM-43) (Machen et al. 2010). The scientific work at TA-54 West has contributed significantly towards one important LANL-wide Cold War historical theme, *Bioscience and Biotechnology*, which includes the subtheme radiation exposure and animal testing.

Bioscience and Biotechnology

Biological research has been an integral part of the scientific activity at the Laboratory since Manhattan Project days. Health research units were established in the wartime Laboratory because, although radiation was known to cause cell injury and genetic mutation, little was known about exposure limits and the mechanisms of damage. Early biological research was devoted to whole-animal studies to better understand the physiological consequences of radiation exposure and to set dose limitations for workers. Later, research was undertaken to understand these effects at the cellular and subcellular level, which led naturally into investigations of the genetic effects of radiation and even later, into the Laboratory's central role in the Human Genome Project (Machen et al. 2010).



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100 50 0 100 Meters

Buildings Being Evaluated
Buildings/Structures
Technical Area 54
Technical Areas
LANL Boundary
Dirt Roads
Paved Roads
20 Ft. Contour
100 Ft. Countour
Township, Range, Sections

Close-up of TA-54 West Evaluated Buildings

Map 3

Radiation Exposure and Animal Testing at TA-54 West

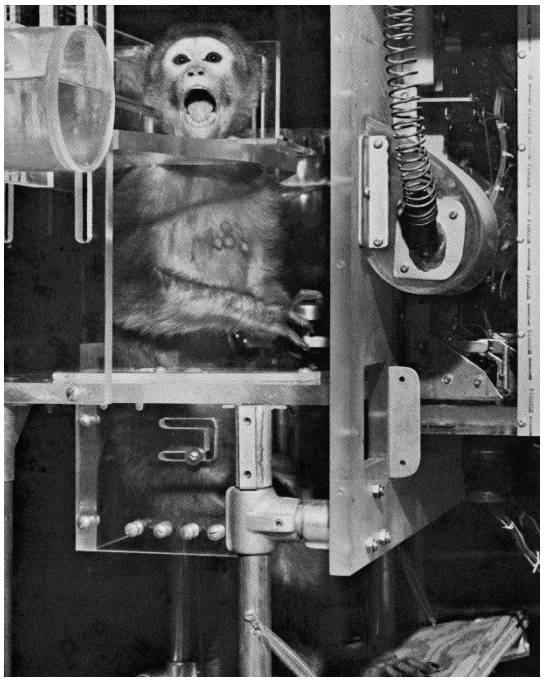
The scientific work at TA-54 West contributes to the Cold War theme of *Bioscience and Biotechnology*, specifically focusing on radiation exposure and mammalian radiobiology research conducted by the Laboratory's Biomedical Research Group (H-4). This research was conducted to better understand the biological responses of mammals to ionizing radiation and radioactive materials (Richmond and Voelz 1973).

Radiation exposure research began at TA-54 West as a result of needing to expand the Health Research Laboratory in the early and mid-1960s. The Radiation Exposure Facility originally consisted of three buildings constructed in 1962: TA-54-1001, the exposure building (formerly TA-51-1); TA-54-1002, a lift house (formerly TA-51-2); and TA-54-1003, a control building (formerly TA-51-3). Research began with exposure studies using Cobalt 60 gamma rays and later focused on dosimeter calibration studies. Later, two animal holding facilities were constructed at TA-54 West that housed several animal species for exposure studies: TA-54-1004 (formerly TA-51-7) was constructed in 1967, and TA-54-1009 (formerly TA-51-15) was constructed in 1974. Animal species used at the exposure facility included mice, dogs, sheep, miniature swine, cows, and Macaque monkeys (LANL 1972, 1984, 1986a, 1986b, 1992).

Personnel from the Biomedical Research Group (H-4) and the Holloman Air Force Base Aero-Medical Laboratory collaborated during Holloman's early spaceflight program with the National Aeronautics and Space Administration (NASA). During the early 1960s, the Radiation Exposure Facility conducted a series of radiation exposure experiments using Macaque monkeys trained for space flight simulation. Six monkeys were observed to see if they could perform tasks during and after exposure to different levels of Gamma radiation (Zimmerman 1965a, 1965b).

Connected to this study, in 1964, eight other monkeys rejected during the Holloman Air Force Base project were used for radiation exposure experiments involving higher lethal doses of radiation. Three years after this lethal exposure study, one of the female monkeys unexpectedly became pregnant by another monkey from the study and gave birth to a healthy baby unaffected by the potentially lethal exposure dose. This unexpected result contributed to the Biomedical Research Group's research of genetics and radiation exposure (LASL 1968).

The Radiation Exposure Facility continued supporting radiation exposure research until the mid-1970s. In the 1980s, the entire facility, including the animal holding facilities, was converted to support non-radiation exposure research on animals (LANL 1986b, 1992).



The Radiation Exposure Facility interior (photo at left) with shielded pit on floor and 3-ton hoist system that raised the radiation source for radiation exposure tests (Zimmerman 1965a). One of the Macaque monkeys (photo at right) used for exposure studies during the collaborative study with Holloman Air Force Base and NASA (Zimmerman 1965b).

MULTIPLE PROPERTY METHOD OF EVALUATION

All five buildings at TA-54 West were evaluated using a multiple property documentation approach. This systematic approach serves as a useful evaluation tool to determine the historical significance of a group of thematically-related properties, such as buildings that support *Bioscience and Biotechnology* at TA-54 West. A key element of the multiple property documentation approach is context. Contexts provide information about historical patterns and trends and have clearly defined themes, geographical areas, and chronological periods (U.S. NPS 1999).

The five historic buildings at TA-54 evaluated in this report are technologically related and date to the late Cold War era at Los Alamos (1956–1990). As discussed in the historical background section above, properties at TA-54 West are linked to subthemes underlying one of the LANL-wide Cold War historical themes identified in a LANL Cold War context document: *Bioscience and Biotechnology* (Machen et al. 2010). Decisions relating to final eligibility recommendations were based on the type of property, the level of physical integrity, and associations with this significant theme.

Associated Property Types

The multiple property documentation approach requires the identification of property types that are associated with historical contexts. This identification facilitates the evaluation of individual properties within the broader complex of properties being reviewed. Properties are compared with other historical resources that have similar histories and similar physical characteristics (Hanford Site 1999a).

There are two general property types associated with TA-54's historical theme of *Bioscience and Biotechnology*.

1. **Laboratory-Testing Buildings or Structures** such as experimental facilities and laboratories.

2. **Support Buildings and Structures** such as warehouses, storage buildings, water tanks, utilities, and waste treatment facilities.

Laboratory-testing facilities located at TA-54 West are associated with the technical functions underlying the main Cold War theme of *Bioscience and Biotechnology*. Specific activities carried out in this type of property supported Cold War biosciences research through whole studies of radiation exposure on animals.

Laboratory-testing facilities are representative of the industrial vernacular architectural style prevalent at the Laboratory. Like LANL's other research facilities, the design of the properties at TA-54 West is primarily determined by the nature of the technical area's specific operations. For example, reinforced concrete is the primary construction material used when designing a facility for chemicals and radioactive materials research because concrete is inherently secure, durable, and cleanable. The type of activities carried out in each building or structure also determines the configuration of interior space. An example at TA-54 West is the radiation exposure building, TA-54-1001.

Support buildings and structures were originally built to support Cold War research and development. Like laboratory-testing facilities, support facilities are divided into two subcategories. First tier support properties are primarily buildings and include machine shops, warehouses, power plants, and significant water tanks. Second tier support properties are primarily structures; examples include pump houses and electrical substations. Examples at TA-54 West of first tier support buildings include the lift house (TA-54-1002), the control building (TA-54-1003), and the animal holding facilities (TA-54-1004 and -1009).

Core properties within each associated property type have also been identified. These buildings or structures are key representatives of their associated theme(s) and are often eligible for the National Register.

Integrity

Although properties may be significant or exceptionally significant and may be eligible for the Register based on association with historical events and contexts, integrity must be determined for all buildings that, on first-cut, are considered eligible. Los Alamos National Security, LLC (LANS) historic buildings staff has developed four integrity codes to better assess potentially eligible properties. The integrity requirements for properties eligible under Criterion A are less stringent than for those properties eligible under Criterion C. A historically significant property with a level 3 integrity could still be eligible, especially if an element of historical uniqueness is involved. Properties eligible under Criterion C should have no lower than a level 2 integrity. Level 4 integrity properties are not eligible for the Register.

1. Excellent Integrity—the property is still closely associated with its primary context and retains integrity of location, design, setting, workmanship, materials, feeling, and association. Little or no remodeling has occurred to the property and all remodeling is in keeping with its associated historic context and significant use period.

2. Good Integrity—the property's interior and exterior retain historic feeling and character but most of the original equipment may be gone. The property may have had minor remodeling.

3. Fair Integrity—a property in this category should retain original location, setting, association, and exterior design. All associated interior machinery and equipment may be absent but the key question is "Is this property still recognizable to a contemporary of the building's historic period?"

4. Poor Integrity—the property has no connection with the historically significant setting, feeling, and context. Major changes to the property have occurred. The property would be unrecognizable to a contemporary.

Themes

Activities within TA-54 West can be grouped under historical subthemes that support the technical area's Cold War scientific theme of *Bioscience and Biotechnology*. The specific subtheme of radiation exposure and animal testing is related to all five buildings described in this report.

Bioscience and Biotechnology (Radiation Exposure and Animal Testing) TA-54-1001, TA-54-1002, TA-54-1003, TA-54-1004, and TA-54-1009

Eligibility Criteria

Laboratory-testing facilities do not need to possess an integrity of both exterior and interior features in order to be eligible for the National Register under Criterion A. In cases where original equipment has been removed, a property can still be considered significant for its historical associations. Laboratory-testing properties need only retain original location, setting, association, feeling, and exterior design to maintain significant historical integrity under Criterion A. Properties eligible under Criterion C have to meet a more stringent standard of physical integrity. However, additions and remodeling that reflect changing scientific missions are acceptable under Criterion C (Hanford Site 1999b).

In order to be eligible under Criterion A, support buildings and structures must have functioned as significant support facilities within an associated historical context (Hanford Site 1999b). First tier support properties, if linked to a historically significant context and 50 years old or older, may be eligible for the Register. If less than 50 years old, support properties must be exceptionally significant.

DESCRIPTIONS OF EVALUATED BUILDINGS

Technical Area: 54
Building Number: 1001

Original Function: Radiation Exposure Facility
Current Function: Air Monitoring Facility
Date Constructed: 1962

Associated Theme: Bioscience/ Biotechnology
Property Type: Laboratory/Testing
Integrity: Good
Core: Yes
Eligibility: Yes (Criterion A)

Buildings with same floorplan within TA: none


View of entrance on north side


View of east side with TA-54-1002 on top

Architectural Description:

TA-54-1001 is an oversized one-story, predominantly octagonal shaped, poured concrete building measuring 42 ft by 42 ft. An L-shaped corridor, with the two legs measuring 31 ft and 23 ft, housed the access tunnel and mechanical room and connects to the octagonal radiation exposure room on the west side. Above the mechanical room is an equipment room. The entire structure is constructed with 4-ft-wide concrete footings, a 6-in. floor slab, and 12-in.-thick concrete walls and is covered with a domed roof ranging in thickness from 2 ft to 2 ft 6 in. The structure is then covered with an additional 8 ft of compacted earth. The radiation exposure room contains a rectangular concrete storage pit measuring 19 ft 2½ in. by 6 ft 2 in. maximum dimensions by 10-ft-deep covered by a metal grate. This pit is currently sealed by a welded metal plate. A 3-ton hoist is located directly above the pit. The hoist is supported by TA-54-1002 that houses the lifting mechanisms and a large vent stack.

The only entrance into the bunkered room is located on the north side of the access tunnel. There are 12-in.-thick concrete retaining walls that angle out from the building; one at 27 degrees measuring 30-ft-long and the other at 45 degrees measuring 24-ft-long. The entrance consists of a pair of painted hollow metal and half-glass (wire) doors.

The interior lighting in the octagonal-shaped room appears to be original along with four fixed camera systems that are in four corners of the ceiling. The original ventilation system appears to be mostly intact with some modifications associated with more recent laboratory equipment. Additionally, the original 3-ton hoist that would raise and lower items from the subfloor pit is intact but not operational.

Historical Background:

TA-54-1001, constructed in 1962 and formerly numbered TA-51-1, is the main building of the Radiation Exposure Facility. Radiation exposure research began at TA-54-1001 in the early 1960s beginning with exposure studies to Cobalt 60 gamma rays. The Radiation Exposure Facility also functioned as a dosimeter calibration facility (LANL 1986a). During exposure experiments, the radiation source would be raised from the pit into the facility's main room via a cable system operated by a 3-ton hoist system supported in building TA-54-1002. Exposure subjects were monitored by instruments and closed circuit television systems from the control building TA-54-1003. Radiation exposure studies continued until the mid-1970s. In the 1980s, the entire facility was reorganized to support non-radiation (i.e., oil shale and nitrogen oxides) exposure research on animals (LANL 1972, 1984, 1986b, 1992; LASL 1961; Zimmerman 1965a, 1965b). Currently, the building is used by the LANL Air Quality Compliance program for instrumentation maintenance and calibration and air sample preparation and processing.

Determination of Eligibility:

This building meets National Register of Historic Places criteria for significance in that it possesses integrity of design, setting, materials, workmanship, feeling, and association. In addition, the building is eligible for inclusion on the Register as a significant property in TA-54 West. The building is significant under Criterion A because of its association with Cold War science in support of the Laboratory's biomedical program through radiation exposure and other animal testing. The building's exterior and interior are relatively unchanged from when it was constructed and its overall physical integrity is good. Unique features like the intact lift system, the plates covering the pit, and video monitoring systems are still intact and demonstrate the interpretation of the building as a key laboratory/testing facility in support of Cold War era biomedical research.

Technical Area: 54
Building Number: 1002

Original Function: Exposure Facility Lift House
Current Function: Equipment Bldg.
Date Constructed: 1962

Associated Theme: Bioscience/ Biotechnology
Property Type: Support Building (1st Tier)
Integrity: Good
Core: Yes
Eligibility: Yes (Criterion A)

Buildings with same floorplan within TA: none

View of east side on top of TA-54-1001

Architectural Description:

TA-54-1002 is a one-story, rectangular-in-plan structure that measures 9 ft 4 in. by 7 ft 4 in. This small building is constructed with a concrete floor slab, concrete masonry unit walls, and a very low pitched gable roof consisting of 2-in. by 6-in. wood joists covered by wood sheathing and a built-up tar and gravel roofing system. The roof overhangs the building walls by 1 ft 4 in. A single painted hollow metal door provides access on the east side. A large vent stack protrudes from the building's roof and is supported by insulated guy wires. A cable tray containing the hoist control and video cables extends out from the building's east side and connects to the control building TA-54-1003. The interior of the building houses the lift mechanism for the 3-ton hoist in TA-54-1001.

During the building walkthroughs, it was noted that although they are no longer in operation, the control and video cables from building TA-54-1003 (the control building) to TA-54-1002 are intact via above ground cable trays. The interior of the building still houses the lift mechanism for the 3-ton hoist in TA-54-1001.

Historical Background:

TA-54-1002, constructed in 1962 and formerly numbered TA-51-2, is a support structure for TA-54-1001. It is the lift house for the 3-ton hoist in TA-54-1001. It is an integral part of the Radiation Exposure Facility since it houses the lift system that would raise and lower a radiation source from the underground pit in TA-54-1001 used during radiation exposure experiments. The lift system would be operated via the control building, TA-54-1003, with cables running along an above-ground cable tray between the two buildings (LANL 1972, 1984, 1986b, 1992; Zimmerman 1965a, 1965b). Currently, the building is not used for any purpose and the lift system is no longer operable.

Determination of Eligibility:

This building meets National Register of Historic Places criteria for significance in that it possesses integrity of design, setting, materials, workmanship, feeling, and association. In addition, the building is eligible for inclusion on the Register as a significant property within TA-54 West. The building is significant under Criterion A due to its association with Cold War science in support of the Laboratory's biomedical program, specifically with radiation exposure research and animal testing. The building is also identified as an integral component of the Radiation Exposure Facility's main building, TA-54-1001.

Technical Area: 54
Building Number: 1003

Original Function: Control Building
Current Function: Restroom/Break room
Date Constructed: 1962

Associated Theme: Bioscience/ Biotechnology
Property Type: Support Building (1st Tier)
Integrity: Good
Core: Yes
Eligibility: Yes (Criterion A)

Buildings with same floorplan within TA: none

View of northeast side with cable tray at right


View of northwest side with cable tray at left


View of southwest and southeast sides

View of southeast side

Architectural Description:

TA-54-1003 is a one-story rectangular-in-plan building that measures 11 ft 4 in. by 17 ft 4 in. The simple building is constructed with a concrete perimeter foundation, 4-in. concrete floor slab, and 8-in. concrete masonry unit walls. There is a 5-in.-thick concrete step at the entry door. The flat roof is constructed with 2-in. by 6-in. wood joists covered with wood sheathing and built-up tar and gravel roof system. The roof overhangs the building walls by 1 ft 4 in. The interior consists of two rooms: the main control room and a restroom.

A single painted hollow metal door is located on the north side and provides the only access into the building. The north side of the building contains a single three-light awning style window currently housing a window air conditioning unit while the east side contains a two-light metal window.

Historical Background:

TA-54-1003, constructed in 1962 and formerly numbered TA-51-3, is the control building for TA-54-1001, the main radiation exposure building. From this building, the mechanism for the 3-ton

hoist in TA-54-1001 was operated. Also, the video monitors were located in this building for observations of experiments in TA-54-1001. Its use for the Radiation Exposure Facility continued until the mid-1970s. During the 1980s, TA-54-1003 was converted to support non-radiation inhalation studies of nitrogen oxides, particularly on rodents (LANL 1984, 1986b, 1992). Currently, the building is being used as a restroom and break room facility.

Determination of Eligibility:

This building meets National Register of Historic Places criteria for significance in that it possesses integrity of design, setting, materials, workmanship, feeling, and association. In addition, the building is eligible for inclusion on the Register as a significant property in TA-54 West. The building is significant under Criterion A due to its association with Cold War science in support of the Laboratory's biomedical program through radiation exposure and other animal testing. The building is an integral part of the Radiation Exposure Facility as the control and monitoring room for experiments conducted with TA-54-1001 during the Cold War. Like TA-54-1002, this building is clearly identifiable as an integral component of the Radiation Exposure Facility.

Technical Area: 54
Building Number: 1004

Original Function: Animal Holding Facility
Current Function: Storage
Date Constructed: 1967

Associated Theme: Bioscience/ Biotechnology
Property Type: Support Building (1st Tier)
Integrity: Fair
Core: No
Eligibility: No

Buildings with same floorplan within TA: none


View of northwest and southwest sides


View of southwest and southeast sides


View of southeast and northeast sides


View of northeast and northwest sides

Architectural Description:

TA-54-1004 is a single-story, pre-engineered building measuring 80 ft by 24 ft. It is constructed of a steel frame, galvanized metal siding and a low pitched 2/12-sloped galvanized metal roof. There are three metal gravity exhausters along the ridge of the roof. Metal half-glass personnel doors are located on the east, west, and north sides of the building. Numerous metal two-light windows are on the north and south sides.

There have been few modifications to the building. The outdoor dog runs constructed of chain link fencing have been removed, as well as the doggie doors into the inside pens. The exterior concrete curbs dividing the 20 runs are still in place. The interior configuration was later modified and adapted to accommodate various dry laboratory activities.

Historical Background:

TA-54-1004, constructed in 1967 and formerly numbered TA-51-7, is a former animal holding facility for the Radiation Exposure Facility complex (TA-54-1001, -1002, and -1003) at TA-54 West. The building was designed to house animals, particularly dogs, used for radiation exposure experiments at the facility. There were 20 individual holding pens and gravel-surface dog runs constructed in the building. At the time of construction, this building doubled the holding capacity of dogs for the biomedical research program. After radiation exposure research was ended at TA-54 West in the 1970s, the facility continued to house animals for non-radiation exposure research conducted during the 1980s. In the early 1990s when all animal exposure research had ended at TA-54 West, the building was remodeled to be an analytical laboratory for environmental studies and the animal holding pens and fences were removed (LANL 1992). It is currently being used for storage.

Determination of Eligibility:

This building does not meet National Register of Historic Places criteria for significance. It is not eligible for inclusion on the Register as a significant property in TA-54 West. The building was built to support radiation exposure experiments conducted in TA-54-1001 during the Cold War. Specifically, the building functioned as an animal holding facility and is of secondary importance to the identified LANL Cold War historical theme *Bioscience and Biotechnology*. Additionally, the building is less than 50 years old and does not meet the level of exceptional significance necessary for Register-eligibility under Criterion Consideration G.

Technical Area: 54
Building Number: 1009

Original Function: Animal Holding Facility
Current Function: Vacant
Date Constructed: 1974

Associated Theme: Bioscience/ Biotechnology
Property Type: Support Building (1st Tier)
Integrity: Poor
Core: No
Eligibility: No

Buildings with same floorplan within TA: none


View of west and south sides


View of north and west sides


View of east side


View of south and east sides

Architectural Description:

TA-54-1009 is a single-story, metal-framed pre-engineered building measuring 32 ft by 80 ft with galvanized ribbed panel siding and roof panels. It has a low-pitched roof at a 2/12-slope. There are four metal gravity exhausters on the roof as well as other utility vents and pipes. The original interior walls were constructed of concrete block (CMU) which separated five animal pens. Outdoor runs were also created with chain link fencing. A unique feature was an 8-ft-tall by 9-ft-diameter metal granary for food storage that has been removed. Metal personnel doors are located on all sides of the building and metal windows are on the east and north sides of the building. Originally, a 1-ton monorail system was incorporated in the building.

In 1979, a lean-to shed was added to the west side of the building, the chain link fencing was removed, and the heating, ventilation, and air conditioning (HVAC) system was upgraded. In 1990, a

major remodel incorporated a new framed ceiling, significant plumbing, and HVAC upgrades to create wet laboratory space. In 1993, a new liquid sanitary drain system, another lean-to type addition, and vestibule were also added. The interior was been modified to accommodate more recent laboratory activities.

Historical Background:

TA-54-1009, constructed in 1974 and formerly numbered TA-51-15, is a former large animal holding facility and laboratory at TA-54 West. The building was originally used to house animals, particularly miniature swine, used for radiation exposure experiments up until the mid-1970s. In the 1980s, TA-54-1009 was converted to support non-radiation exposure experiments focused on the toxicity of oil shale, particularly on cows. The building was periodically cleaned out and waste materials went to a sanitary landfill. In 1986, all residues were reported to have been bagged and none are thought to remain in the building. In 1987, the building housed rodents used for research on the effects of exposure to nitrous oxides. In the 1990s, the building was converted into office spaces and laboratories for conducting industrial hygiene research related to respiratory protective devices (LANL 1984, 1992, 2010). Currently, the building is not in use because of contamination issues from activities after animal research ceased at TA-54 West.

Determination of Eligibility:

This building does not meet National Register of Historic Places criteria for significance. It is not eligible for inclusion on the Register as a significant property in TA-54 West. The building originally supported radiation exposure experiments conducted in TA-54-1001 during the Cold War during the 1970s. In the 1980s, it was later converted into a laboratory for oil shale testing on animals. Specifically, the building functioned as a support building, an animal holding facility, and laboratory and is of secondary importance to the LANL Cold War theme of *Bioscience and Biotechnology*. Additionally, the building is less than 50 years old and does not meet the level of exceptional significance necessary for Register-eligibility under Criterion Consideration G.

National Register Eligibility Recommendations

Properties Determined Eligible for the National Register of Historic Places

Of the five Cold War-era buildings evaluated for Register eligibility in this report, three are determined eligible under Criterion A (properties associated with events that have made a significant contribution to the broad patterns of our history). Historically, these properties supported biomedical research on animals focusing on dosimetry and genetic effects of radiation exposure during the Cold War, circa 1962 to the mid-1970s and later supported research on the effects of non-radiation exposure on animals from the mid-1970s into the 1980s. Buildings TA-54-1001, TA-54-1002, and TA-54-1003 were constructed in 1962 and form a functional grouping of buildings that make up the Radiation Exposure Facility. Their unique function and history forms their connection to the Cold War historical theme *Bioscience and Biotechnology* through the previously discussed subtheme of radiation exposure and animal testing.

Table 1 lists buildings evaluated in this report that are considered eligible for listing in the Register.

Table 1. Register Eligible TA-54 Properties

Property Number	Use	Date	Associated Themes	Property Type	Integrity	Core
54-1001	*Radiation Exposure Facility (Laboratory)*	*1962*	*Bioscience and Biotechnology*	*Laboratory/Testing*	*Good*	*Yes*
54-1002	*Radiation Exposure Facility Lift House (Support Bldg)*	*1962*	*Bioscience and Biotechnology*	*Support Bldg (1st Tier)*	*Good*	*Yes*
54-1003	*Radiation Exposure Facility Control Building (Support Bldg)*	*1962*	*Bioscience and Biotechnology*	*Support Bldg (1st Tier)*	*Good*	*Yes*
Total Number of Eligible Properties: 3						

Properties Determined Not Eligible for the National Register of Historic Places

Not all LANL properties constructed within the Laboratory's Manhattan Project and Cold War periods of significance[2] are historically important. In some cases, a property is of secondary or minor importance and does not contribute to the understanding of the key historical events or scientific developments that have taken place at the Laboratory. For example, some properties served a purely support function and do not adequately illustrate the historical themes shaping Laboratory history. In other cases, properties associated with significant LANL events have been modified to such an extent that the loss of physical integrity has impacted their status as Register-eligible properties.

The two animal holding facilities, TA-54-1004 and TA-54-1009, are not considered eligible for the Register because they are of secondary importance to the historical Cold War theme *Bioscience and Biotechnology*. These buildings housed animals used in radiation exposure experiments conducted

[2] See LANL Cultural Resources Management Plan (LANL 2006).

during the 1960s and 1970s in the Radiation Exposure Facility's main building (TA-54-1001). TA-54-1009's later function as a laboratory for non-radiation exposure testing in the 1980s is not part of the identified subtheme radiation exposure and animal testing. Furthermore, both of these buildings are less than 50 years old and do not meet the level of exceptional significance necessary for Register-eligibility under Criterion Consideration G.

Table 2 lists properties evaluated in this report that are not eligible for listing on the Register.

Table 2. Non-Register Eligible TA-54 Properties

Property Number	Use	Date	Associated Themes	Property Type	Integrity	Core
54-1004	*Animal Holding Facility (Support Bldg)*	*1967*	*Bioscience and Biotechnology*	*Support Bldg (1st Tier)*	*Fair*	*No*
54-1009	*Animal Holding Facility/Biomed Laboratory (Support Bldg)*	*1974*	*Bioscience and Biotechnology*	*Support Bldg (1st Tier)*	*Poor*	*No*
Total number of non-eligible properties: 2						

CONCLUSION

In compliance with Section 106 and Section 110 of the *National Historic Preservation Act*, LANS cultural resources staff has completed the evaluation of a small group of buildings associated with Cold War animal exposure experiments for inclusion in the Register. Of the evaluated properties, the three buildings that make up the former Radiation Exposure Facility, TA-54-1001, TA-54-1002, and TA-54-1003, are considered Register-eligible, while the two former animal holding facilities, TA-54-1004 and TA-54-1009, are considered not eligible.

The two buildings considered not eligible for the Register (TA-54-1004 and TA-54-1009) are scheduled for demolition during FY 2015 as part of LANL's Footprint Reduction Program activities.

In addition to Register evaluations, the historic properties at TA-54 were assessed for their preservation and public interpretation potential. The three Register-eligible properties are identified as unique Cold War facilities that should be retained for long-term adaptive reuse and historic interpretation at the Laboratory. TA-54-1001 is currently used as an air monitoring facility for LANL's Environmental Stewardship Service Group and for storage. TA-54-1003 is currently used as a break room and restroom at TA-54 West. TA-54-1002, although no longer in use, should be retained because of its connection as the lift building for the 3-ton hoist with TA-54-1001, the main radiation exposure building, and TA-54-1003, the control room.

The U.S. DOE, NNSA, Field Office requests the State Historic Preservation Officer to concur with the eligibility determinations contained in this report for the five properties at TA-54 West. Additionally, this report serves as notification that the two Register-ineligible properties described in this report, TA-54-1004 and TA-54-1009, will be demolished.

REFERENCES CITED

Gosling, F.G.

2001 "The Manhattan Project: Making the Atomic Bomb." U.S. Department of Energy. Copies available from DOE/MA-0002.

Hanford Site

1999a "Multiple Property Documentation." *Section 1.0, Introduction.* http://www.hanford.gov/doe/culres/mpd/sec1.htm #1.0, accessed using Netscape on 1/26/99 at 10:18 AM.

1999b "Multiple Property Documentation." *Section 5.0, The Manhattan Project and Cold War Eras, Plutonium Production at the Hanford Site, December 1942-1990.* http://www.hanford.gov/doe/culres/mpd/sec5.htm #5.0, accessed using Netscape on 1/26/99 at 10:46 AM. Authored by M. S. Gerber, Westinghouse Hanford Company, and D. W. Harvey and J. G. Longenecker, Pacific Northwest National Laboratory, Richland, Washington.

LANL (Los Alamos National Laboratory)

1972 "Preliminary Proposal." LANL Environmental Restoration Program (document reference number ERID-8359), Los Alamos National Laboratory, Los Alamos, New Mexico.

1984 "Occupational Health and Environmental Research Program of the Health Division 1982." LA-9958-PR Progress Report, Los Alamos National Laboratory, Los Alamos, New Mexico.

1986a "Technical Area 51 – Radiation Exposure Facility – February 21, 1986" LANL Environmental Restoration Program (document reference number ERID-008360), Los Alamos National Laboratory, Los Alamos, New Mexico.

1986b "Los Alamos CEARP Phase 1 Final – October 3, 1986; TA-51 Radiation Exposure Facility." LANL Environmental Restoration Program (document reference number ERID-025571), Los Alamos National Laboratory, Los Alamos, New Mexico.

1992 "RFI Work Plan for Operable Unit 1148." LA-UR-92-855. Los Alamos National Laboratory, Los Alamos, New Mexico.

1993 "Los Alamos: Beginning of an Era, 1943–1945." Reprinted by the Los Alamos Historical Society, Los Alamos, New Mexico.

2001 "The Laboratory in a Changing World: A Los Alamos Chronology." LALP-01-65. The Nuclear Weapons Publication Team, Los Alamos National Laboratory, Los Alamos, New Mexico.

2006 "A Plan for the Management of the Cultural Heritage at Los Alamos National Laboratory, New Mexico." LA-UR-04-8964, Los Alamos National Laboratory, Los Alamos, New Mexico.

2010 "Respiratory Protection Device Decontamination at TA-54-1009." LANL Environmental Programs (document number EP-DIV-100001), Los Alamos National Laboratory, Los Alamos, New Mexico.

LASL (Los Alamos Scientific Laboratory)

1961 "Lab Schedules 15 Construction Projects." *LASL News*. Volume 3 Number 11, June 1, 1961. Los Alamos Scientific Laboratory, Los Alamos, New Mexico.

1968 "Nancy' Sheds New Light On Effects Of Radiation." *The Atom*. Volume 5, Number 1, January, 1968. p. 7–9. Los Alamos Scientific Laboratory, Los Alamos, New Mexico.

Machen, Judy, Kari L.M. Garcia, Ellen D. McGehee, Erik Loomis, Naomi Naranjo, Ken Towery, John Ronquillo, Sheila McCarthy, and Kristen Honig

2010 "SM-43, Nerve Center of a National Laboratory: A History of the Los Alamos Administration Building (1956 to 2006)." LA-UR-11-00922, Los Alamos National Laboratory, Los Alamos, New Mexico.

McGehee, Ellen D. and Kari L.M. Garcia

1999 "Historical Building Assessment for the Department of Energy Conveyance and Transfer Project." Historic Building Survey No. 178, LA-UR-00-1003. On file at RRES-ECO, Los Alamos National Laboratory, Los Alamos, New Mexico.

Richmond, C.R. and G.L. Voelz (editors)

1973 "Annual Report of the Biological and Medical Research Group (H-4) of the LASL Health Division, January through December 1972." LA-5227-PR Progress Report, Los Alamos Scientific Laboratory, Los Alamos, New Mexico.

Zimmerman, Earl

1965a "The Monkey Wrench in the Moon Mission." *The Atom*. Volume 2 Number 2, February 1965. p. 16–18. Los Alamos Scientific Laboratory, Los Alamos, New Mexico.

1965b "For Astromonks, Mission Completed." *The Atom*. Volume 2 Number 10, September 1965. p. 11–13. Los Alamos Scientific Laboratory, Los Alamos, New Mexico.

U.S. DOE (Department of Energy, Nevada Operations Office)

2000 "United States Nuclear Tests, July 1945 through September 1992." DOE/NV-209-REV.

U.S. NPS (National Park Service)

1999 "National Register Bulletin: How to Complete the Multiple Property Documentation Form." http://www.cr.nps.gov/nr/bulletins/nr16b.htm. Accessed on January 28, 1999.

APPENDIX A. Historic Building Inventory Forms with Selected Photographs and Building Drawings for TA-54-1001, -1002, -1003, -1004, and -1009.

LANL TA- Building # 54-1001

Camera 984244

Frame #s DCP_4779 through DCP_4780

Surveyor(s) S. McCarthy, J. Ronquillo, N. Naranjo

Date 8/17/2006

Los Alamos National Laboratory
RMT Historic Building Survey Form

Building Name Radiation Exposure Building UTMs easting 385508 northing 3967714 zone 13

Legal Description: Map Friioles Ouad 2002 tnsp 19N range 6E sec

Current Use/ Function Air Monitoring Original Use/ Function Radiation Exposure Building

Date (estimated) Date (actual) 1962 Property Type Laboratory/Processing

Type of Construction

Pre-Fabricated Metal ☐ Steel Frame ☐ Wood Frame ☐ CMU ☐ Reinforced Concrete ☑

Other Type of Construction Octagonal with rectangular entry halls # of Stories 1

Foundation Reinforced Concrete

Exterior CMU-Exterior ☐ Reinforced Concrete-Exterior ☑ Steel (galvanized) ☑ Steel (corrugated) ☐

Wood Siding ☐ Asbestos Shingles-Exterior ☐ In-Fill Panels ☐ Other-Exterior

Exterior Treatment (painted, stuccoed, etc) Covered with compacted earth

Exterior Features (docks, speakers, lights, signs, etc) Signage, lights, concrete wing walls with steel retaining panels.

Addition CMU-Addition ☐ Reinforced Concrete-Addition ☐ Steel (galvanized)- Addition ☐ Wood ☐

Steel (corrugated)-Addition ☐ Asbestos Shingles-Addition ☐ Other- Addition

Exterior Treatment-Addition

Exterior Features-Addition

Roof Form Slanted/Shed ☐ Gable ☐ Other Roof Type Slightly domed

Degree of Pitch/ Slope

Roof Materials Corrugated Metal ☐ Rolled Asphalt ☐ Asbestos Shingles ☐ 4-Ply Built Up ☐

Other Roof Materials Concrete covered with compacted earth

Window Type Casement ☐ Single Hung Sash ☐ Double Hung Sash ☐ Fixed Window ☐

Other Window Type none

# of Each Window Type/ Comments

Glass Type Clear ☐ Wire Glass ☑ Opaque ☐ Painted Glass ☐ Glass Block ☐

Light Pattern

Door Type Personnel Door Types Exterior Fire Door ☐ Single ☐ Double ☑ Roll-up ☐ Sliding ☐

Hollow Metal ☑ Solid Wood ☐ 1/2 Glazed ☑ Paneled ☐
Louvered ☐ Painted ☑

Interior Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐
Hollow Metal ☐ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☐

Equipment Door Types Exterior Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐
Hollow Metal ☐ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☐

Interior Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐
Hollow Metal ☐ Solid Metal ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☐

# of Each Door Type/Comments: Pair of doors leading to access tunnel.

Interior Wall Gypsum Board ☐ Reinforced Concrete- Interior ☐

CMU- Interior ☐ Plywood ☐ Other- Interior

In-Wall Electrical Wiring ☐ On-Wall Electrical Wiring ☐

Ceiling Drop Ceiling ☐

Interior Comments (Equipment, etc)

Degree of Remodeling Unknown/None

Condition Excellent ☐ Good ☑ Fair ☐ Deteriorating ☐ Contaminated ☐ Burned ☐

Associated Buildings ☑

If yes, list building names and #s TA-54-1002, -1003, -1004, & -1009

Integrity Good

Significance Eligible

Eligible Under Criterion A ☑ B ☐ C ☐ D ☐ Not Eligible ☐

DOE Themes

Nuclear Weapon Components and Assembly ☐ Nuclear Weapon Design and Testing ☐ Nuclear Propulsion ☐

Peaceful Uses: Plowshare, Nuclear Medicine, Nuclear Energy, Nuclear Science ☑ Energy and Environment: Research and Design Projects ☐

LANL Themes

Weapons Research and Design, Testing, and Stockpile Support ☐ Super Computing ☐

Reactor Technology ☐ Biomedical/Health Physics ☑ Strategic and Supporting Research ☐

Environment/Waste Management ☐ Administration and Social History ☐ Architectural History ☐

Recommendations/ Additional Comments

Architectural Features (elevations) TA-54-1001 (formerly TA-51-1 is an oversized one-story, predominately octagonal-in-plan structure measuring 42 ft by 42 ft in size. An L-shaped corridor, with the two legs measuring 31 ft and 23 ft, houses the access tunnel

and mechanical room and connects to the octagonal radiation exposure room. The entire structure is constructed with 4 ft wide concrete footings, 6 in. floor slab, and 12 in. thick concrete walls and is covered with a domed roof ranging in thickness from 2 ft to 2 ft 6 inches. The structure is then covered with an additional 8 ft of compacted earth. The radiation exposure room contains a 10 ft deep concrete storage pit and a three-ton hoist directly above it. The hoist is supported by TA-54-1002 that houses the lifting mechanisms as well as a large vent stack.

The only entrance into the bunked room is located on the north side of the access tunnel. Twelve-inch-thick concrete retaining walls angle out from the building one at 27 degrees measuring 30 ft long and the other at 45 degrees measuring 24 ft long. The entrance consists of a pair of painted hollow metal and half-glass (wire) doors.

Total sq ft 2023 net **Architect/ Builder** Kenneth S. Clark, Architect-Engineer

Alterations

List of Drawings (Cntrl + Enter for para break)

ENG-C 30347
Sheet 13 of 26
Radiation Exposure Facility TA-51 (now TA-54)
TA-54-1001 (formerly TA-51-1)
Structural
Floor & Foundation Plan
July 17, 1961

ENG-C 30348
Sheet 14 of 26
Radiation Exposure Facility TA-51 (now TA-54)
TA-54-1001 (formerly TA-51-1)
Structural
Roof Framing Plan
July 17, 1961

ENG-C 30350
Sheet 16 of 26
Radiation Exposure Facility TA-51 (now TA-54)
TA-54-1001 (formerly TA-51-1)
Architectural
Floor Plan
July 17, 1961

ENG-C 30351
Sheet 17 of 26
Radiation Exposure Facility TA-51 (now TA-54)
TA-54-1001 (formerly TA-51-1)
Architectural
Sections
July 17, 1961

ENG-C 30352
Sheet 18 of 26
Radiation Exposure Facility TA-51 (now TA-54)
TA-54-1001 (formerly TA-51-1)
Architectural
Pit Plan and Details
July 17, 1961

ENG-R 3287
Sheet 1 of 1
Radiation Exposure Building TA-51-1
Floor Plan
September 27, 1983

ENG AB-502
Sheet 1 of 1
Radiation Exposure Building
As-Built Record Floor Plan
Arch: Record Floor Plan
August 17, 1995

TA-54-1001 North side

TA-54-1001 East side

NOTES:

① = 6" slab (w/#4@12" E.W.@ mid-depth) on 6" drainage fill on compact earth.

② Key floor slab (1'-6" deep) into wall.

③ Conc. strut: 12"x12" w/2#6 T.&B. & #3 ▢ ties @ 12". Top @ -1'-6"

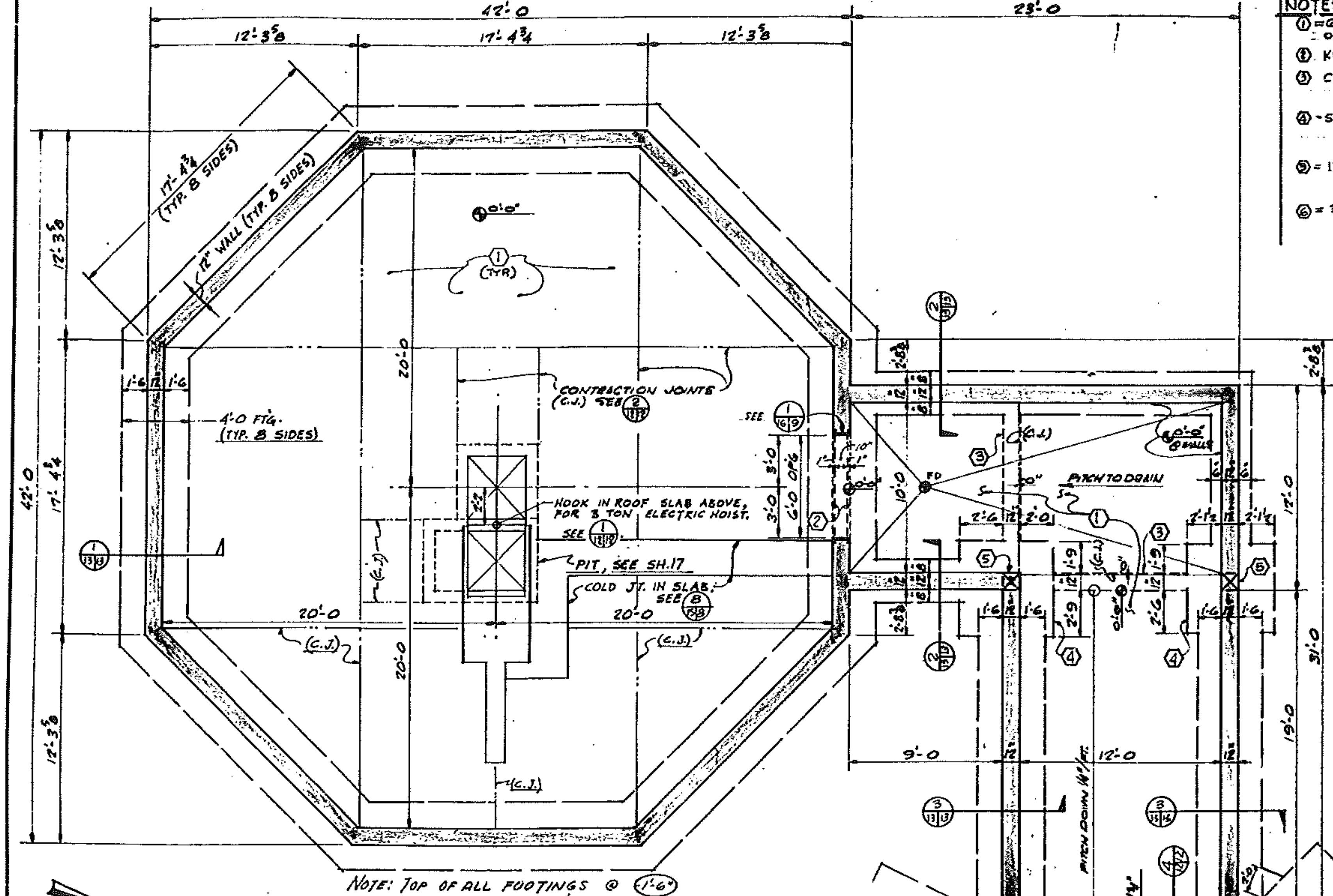
④ - Spot ftg. - 1'-4" deep w/#5 @ 6" c/c E.W. @ 3" clear from bott.

⑤ = 12"x12" col. w/ 4#7 x 23'-4" lg. (dowel to ftg.) & #3 ▢ 9" ties @ 12" c/c

⑥ = 3/8" PL : (2 req'd) weld thus:

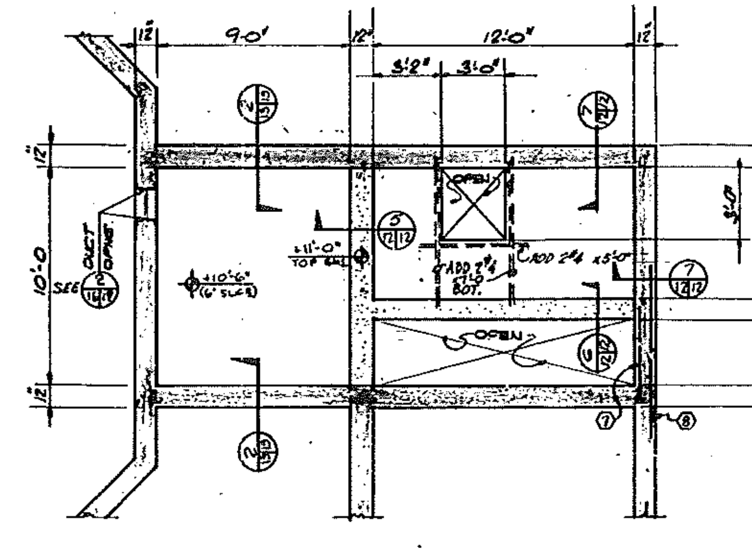
⑦ Add 2#5 x 4'-0 @ 1 5/8" cl. from inside face: +10'-6

⑧ Add 2#6 x 8'-0 @ 2 5/8" cl. from outside face: +10'-6

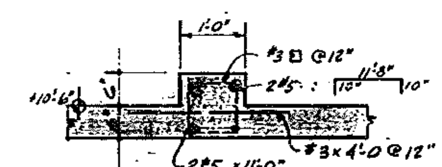


NOTE: TOP OF ALL FOOTINGS @ (-1'-6")

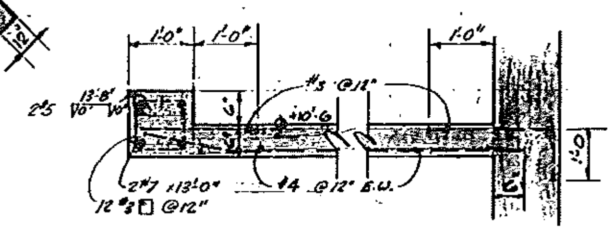
FLOOR & FOUNDATION PLAN ··REF-1
Scale: 1/4"=1'-0



" FLOOR FRAMING PLAN "
(MECHANICAL ROOM)
Scale: 1/4"=1'-0

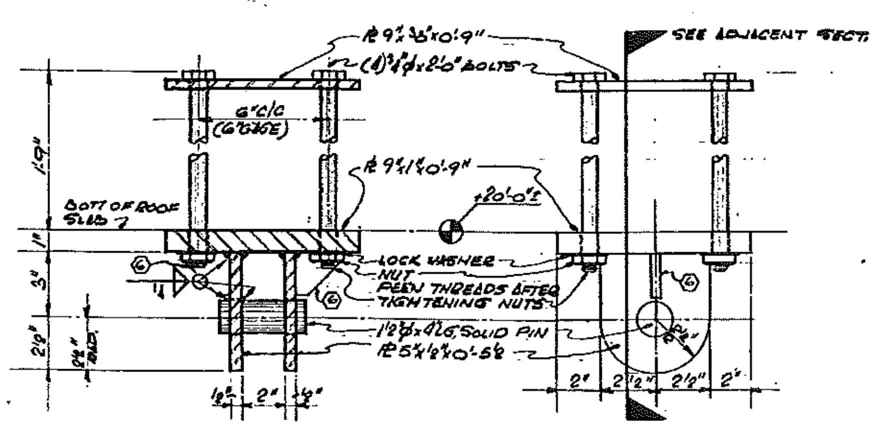


SECTION 5/12|12
SCALE-3/4"=1'-0"



SECTION 6/12|12
SCALE-3/4"-1'-0"

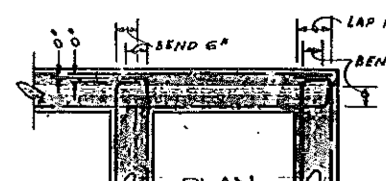
SECTION 7/12|12
SCALE-3/4"=1'-0"



•SECTION• •ELEV.•

HOIST HOOK DETAIL 1/12|12 3"=1'-0"

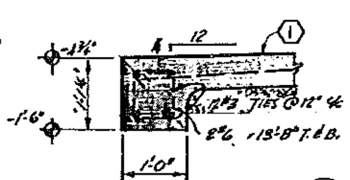
2/12|12 3/4"=1'-0"



TYP. BAR BENDING @ WALL CORNERS 3/13|12
NOT TO SCALE

CORNER DOWELS MAY BE USED IN LIEU OF BENDING MAIN WALL REINFORCING.

(THIS DET. DOES NOT APPLY TO WALL CORNERS OF RADIATION EXPOSURE RM)



SECTION 4/12|12
SCALE-3/4"=1'-0"

STRUCTURAL NOTES:

a. DESIGN LIVE LOADS: ROOF = 8 FT. OF EARTH, F.L.S 250 PSF (TOTAL = 1050 PSF); MECH. EQUIP. = 150 PSF (2) 3 TON ELECTRIC HOISTS = 8,700 # EACH (INCLUDING HOIST WT. & 25% IMPACT FACTOR); LATERAL EARTH PRESSURE = 30 PSF/FT W/ 2 1/2 FT. SURCHARGE.

b. +10'-0" INDICATES SURFACE ELEVATION W/RESPECT TO FIN. FIRST FLOOR. (-1'-6") INDICATES TOP OF FOOTING (OR BOT. OF WALL) ELEV. W/ RESPECT TO FIN. FIRST FLOOR.

c. CONCRETE: f'c = 3500 PSI @ 28 DAYS. SEE SPECS. FOR ADMIXTURE (PLASTIMENT) REQUIRED.

SEE ARCH. MECH. & ELECT. PLANS FOR OPENINGS CHASES, INSERTS, ETC. IN ALL CONCRETE BEFORE POURING. PROVIDE 3/4" CHAMFER @ EXPOSED CORNERS.

d. REINFORCING BAR ARRANGEMENT, SUPPORTS, & ACCESSORIES PER ACI DETAILING MANUAL. LAP CONT. REINFORCING 24 DIA. @ SPLICES.

e. FOOTINGS TO BEAR ON FIRM, UNDISTURBED EARTH. CENTER FOOTINGS UNDER WALLS, EXCEPT WHERE OTHERWISE SHOWN.

f. DO NOT PLACE BACKFILL AGAINST UNDERGROUND WALLS UNTIL SLAB ABOVE IS IN PLACE.

AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO. AT(29-1)-1673
SUBMITTED [signature] ARCHITECT-ENGINEER
RECOMMENDED [signature]
APPROVED [signature]

DOES NOT CONTAIN OFFICIAL USE ONLY INFORMATION
Name/Org: Jill Hefele/S-7 Date: 7/13/04

NO	DATE	REVISIONS
1	6-1-65	WAS SHT. 12 OF 25 / 13 OF 26

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

CALIBRATION TEST FACILITY TA-3 AND RADIATION EXPOSURE FACILITY TA-51
LOS ALAMOS, NEW MEXICO

RADIATION EXPOSURE FACILITY TA-51
STRUCTURAL
FLOOR & FOUNDATION PLAN

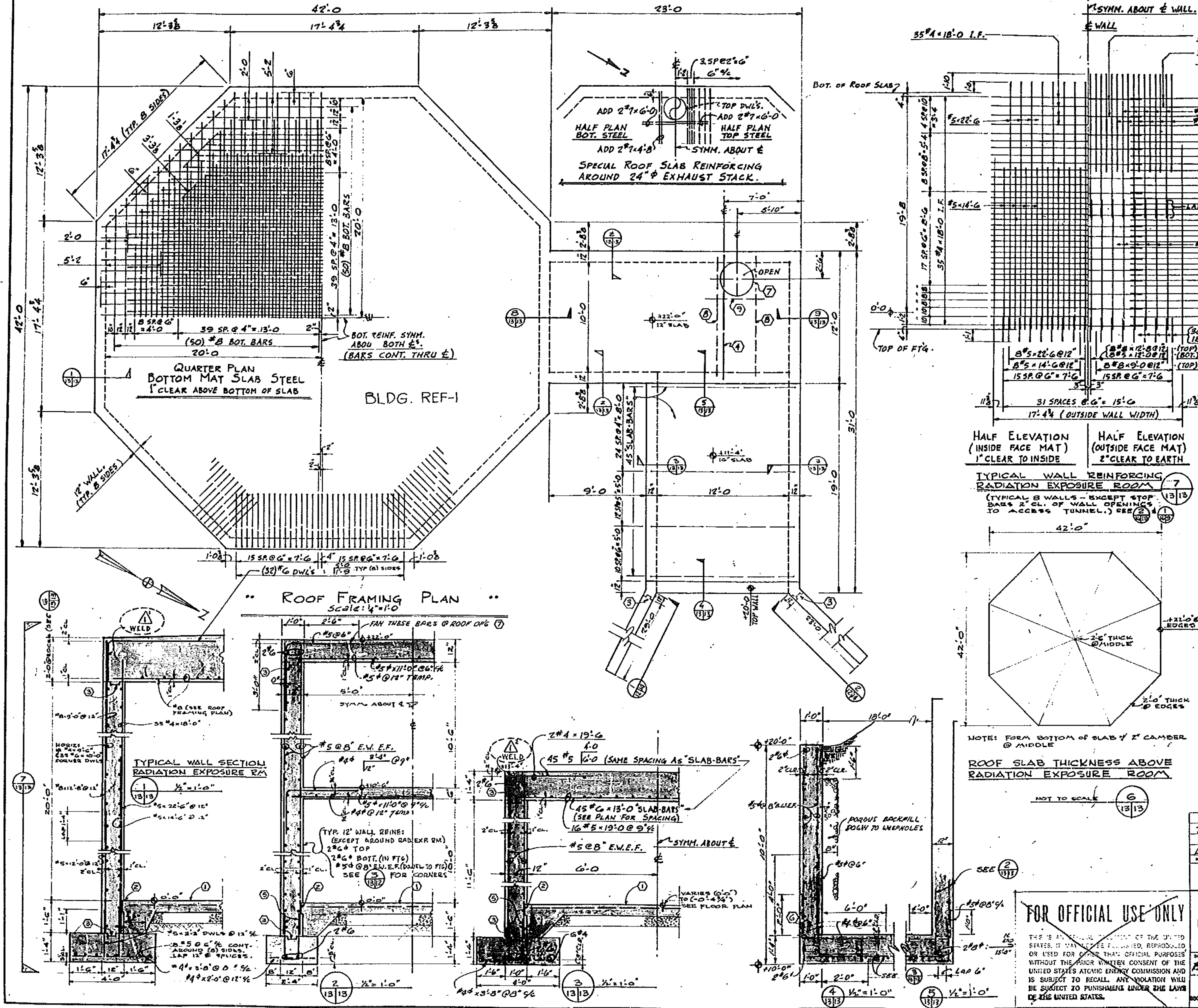
CONTRACT NO.	AT(29-1)-1640
DRAWN	E.P.V.
CHECKED	W.&D.
DESIGN	D.O.
CHIEF	R.S.C.
SCALE	AS SHOWN
DATE	17 JUL 61

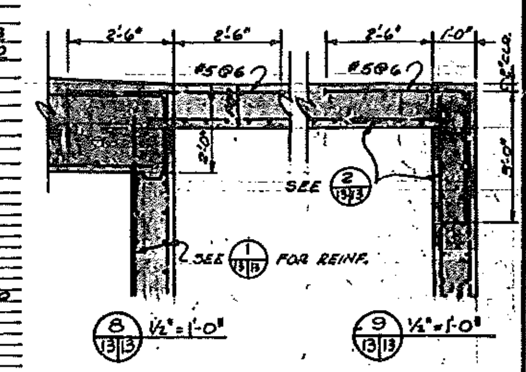
SUBMITTED Kenneth S. Clark, ARCHITECT-ENGINEER — RECOMMENDED N.A. Warren, A.E.C. — APPROVED [signature]

KENNETH S. CLARK, ARCHITECT – ENGINEER, 350 EAST PALACE AVENUE, SANTA FE, NEW MEXICO — DRAWING NO. LA-EQ 12/25 — SHEET 13 OF 26

REC'D ENG-3 1/22/62 LOGGED 1/22/62 VAULT 1/22/62

LAB JOB 2517 L.A.S.L. DWG. NO. ENG-C 30347





DOES NOT CONTAIN
OFFICIAL USE ONLY
INFORMATION
Name/Org: Jill Hefele/S-7 Date: 7/13/04

NOTES

1	= 6" SLAB (W/ #4 @ 12" E.W. @ MID DEPTH ON 6" DRAINAGE FILL ON COMPACTED EARTH
2	= KEY INTO OUTSIDE WALLS (3/4"×6")
3	= 2×6 BEV. KEY
4	= 8 I 18.4# × 11'-4" LG @ 2" CLEAR BELOW ROOF SLAB. EMBED 8" IN SIDE WALLS.
5	= DOWELS: #5-2'-2" @ 16" % E.F. (1'-1" INTO FTG)
6	= 2" φ WEEP HOLES (2 REQ'D @ 8'-0" %)
7	= 3'-0" O.D. CORRUGATED METAL PIPE THRU 12" ROOF SLAB. SEE 7
8	= ADD 3 #5 × 11'-0 BOT. @ BOTH SIDES OPG.
9	= ADD 3 #5 × 7'-0 BOT.

AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO. AT(29-1)-1673
SUBMITTED
RECOMMENDED
APPROVED

2		13 - 25
1		14 - 26
A	6-1-62	CHANGES AS BUILT
NO.	DATE	REVISIONS

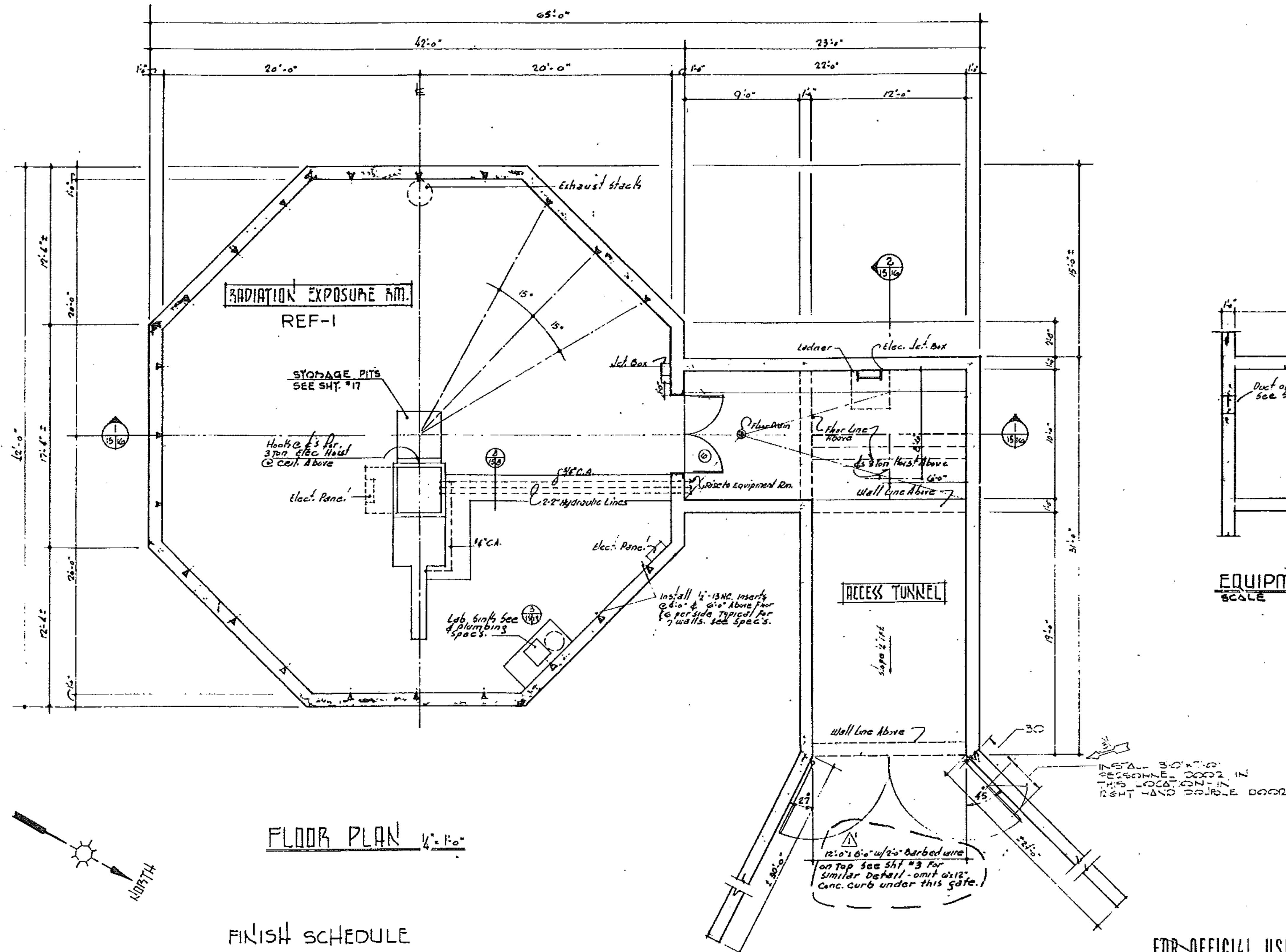
U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO
CALIBRATION TEST FACILITY TA-3 AND RADIATION EXPOSURE FACILITY TA-51
LOS ALAMOS, NEW MEXICO
RADIATION EXPOSURE FACILITY TA-51
STRUCTURAL
ROOF FRAMING PLAN

KENNETH S. CLARK
ARCHITECT - ENGINEER
SANTA FE, NEW MEXICO

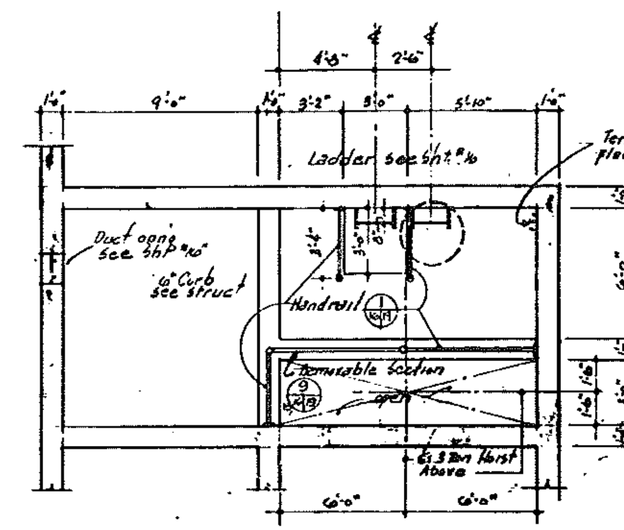
LA-EQ-13/25.1 | SHEET 14 OF 26

REC'D ENG-3 7/21/62 LOGGED 7/21/62 VAULT 7/21/62

LAB JOB 2517 L.A.S.L. DWG. NO. ENG-C 30348



FLOOR PLAN ¼" = 1'-0"



EQUIPMENT RM. FLOOR PLAN
SCALE ¼" = 1'-0"

FINISH SCHEDULE

Base: none
Floor: Concrete
Walls: Concrete
Ceil.: Concrete

DOES NOT CONTAIN OFFICIAL USE ONLY INFORMATION
Name/Org: Jill Hefele/S-7 Date: 7/13/04

FOR OFFICIAL USE ONLY

AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO AT (29-1)-1673
SUBMITTED
RECOMMENDED
APPROVED

NOTE:
See Sheet #7 for color schedule
See Sheet #9 for Dr. & window Details

No	Date	Revisions	By	Ck		
3		ADDED PERSONNEL DOOR				
2	6-11-62	15 25				
		16 26				
1	9-61	ADDENDUM #1	D.O.	KSC.		

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

CALIBRATION TEST FACILITY TA-3 AND RADIATION EXPOSURE FACILITY TA-51
LOS ALAMOS, NEW MEXICO

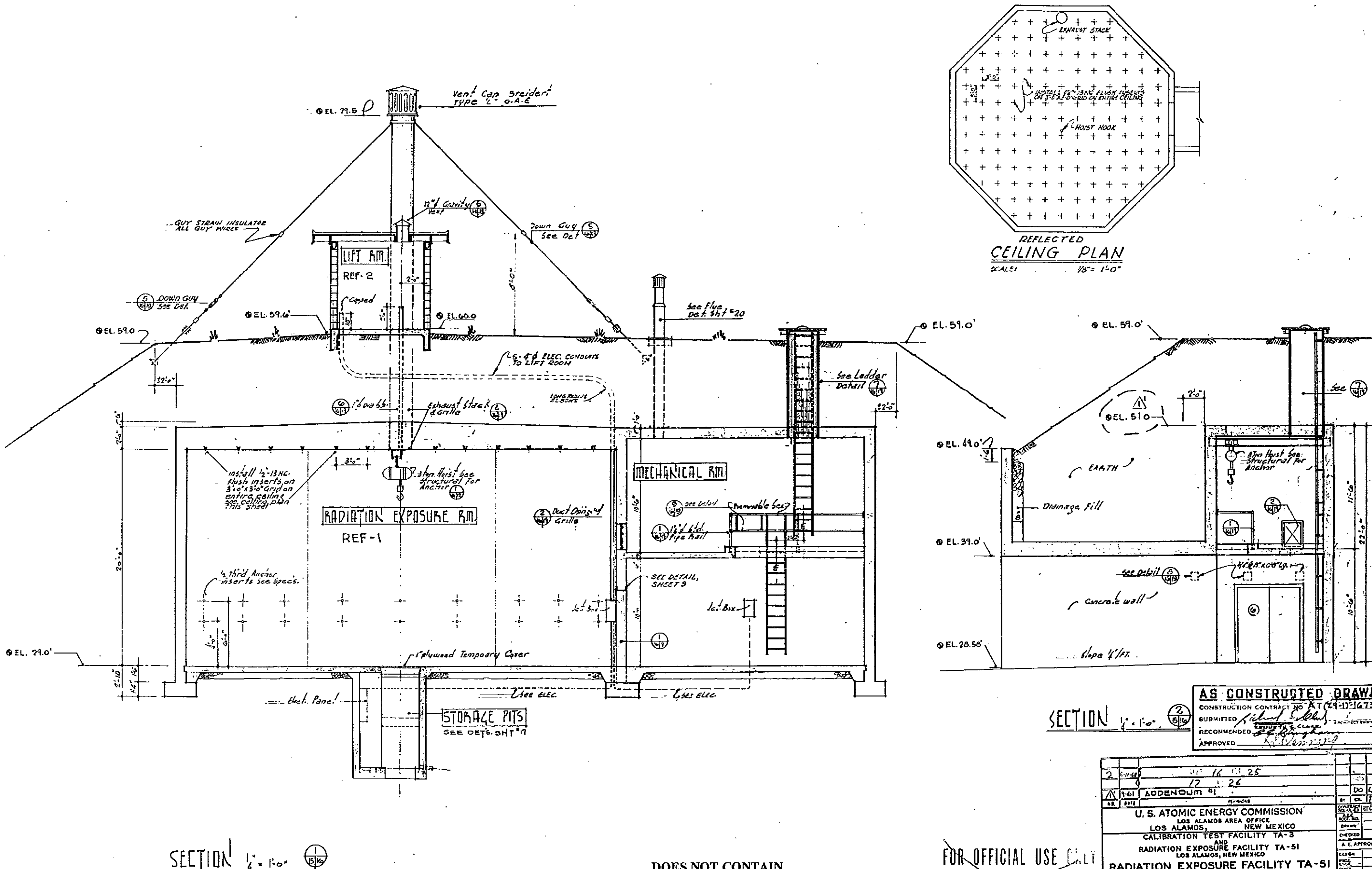
RADIATION EXPOSURE FACILITY TA-51
ARCHITECTURAL FLOOR PLAN

Contract No. AT(29-1)-46 | Drawn D.O. | Checked D.O. | Scale AS SHOWN | Date 17 JULY 61

KENNETH S. CLARK
ARCHITECT - ENGINEER
350 EAST PALACE AVENUE SANTA FE, NEW MEXICO

Drawing No. LA-EQ 15/251 | Sheet 16 of 26

LASL DWG. NO. ENG-C 30350



AS CONSTRUCTED DRAWING

CONSTRUCTION CONTRACT NO AT(29-1)-1673

SUBMITTED

RECOMMENDED

APPROVED

2		16 25
		17 26
1	9-61	ADDENDUM #1

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

CALIBRATION TEST FACILITY TA-3
AND
RADIATION EXPOSURE FACILITY TA-51
LOS ALAMOS, NEW MEXICO

RADIATION EXPOSURE FACILITY TA-51
ARCHITECTURAL SECTIONS

DRAWN: D.O.
CHECKED: D.O.
SCALE: AS SHOWN
DATE: 17 JULY 61

KENNETH S. CLARK
ARCHITECT – ENGINEER
350 EAST PALACE AVENUE SANTA FE, NEW MEXICO

DRAWING NO. LA-EQ16/25 SHEET 17 OF 26

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Name/Org: Jill Hefele/S-7 Date: 7/13/04

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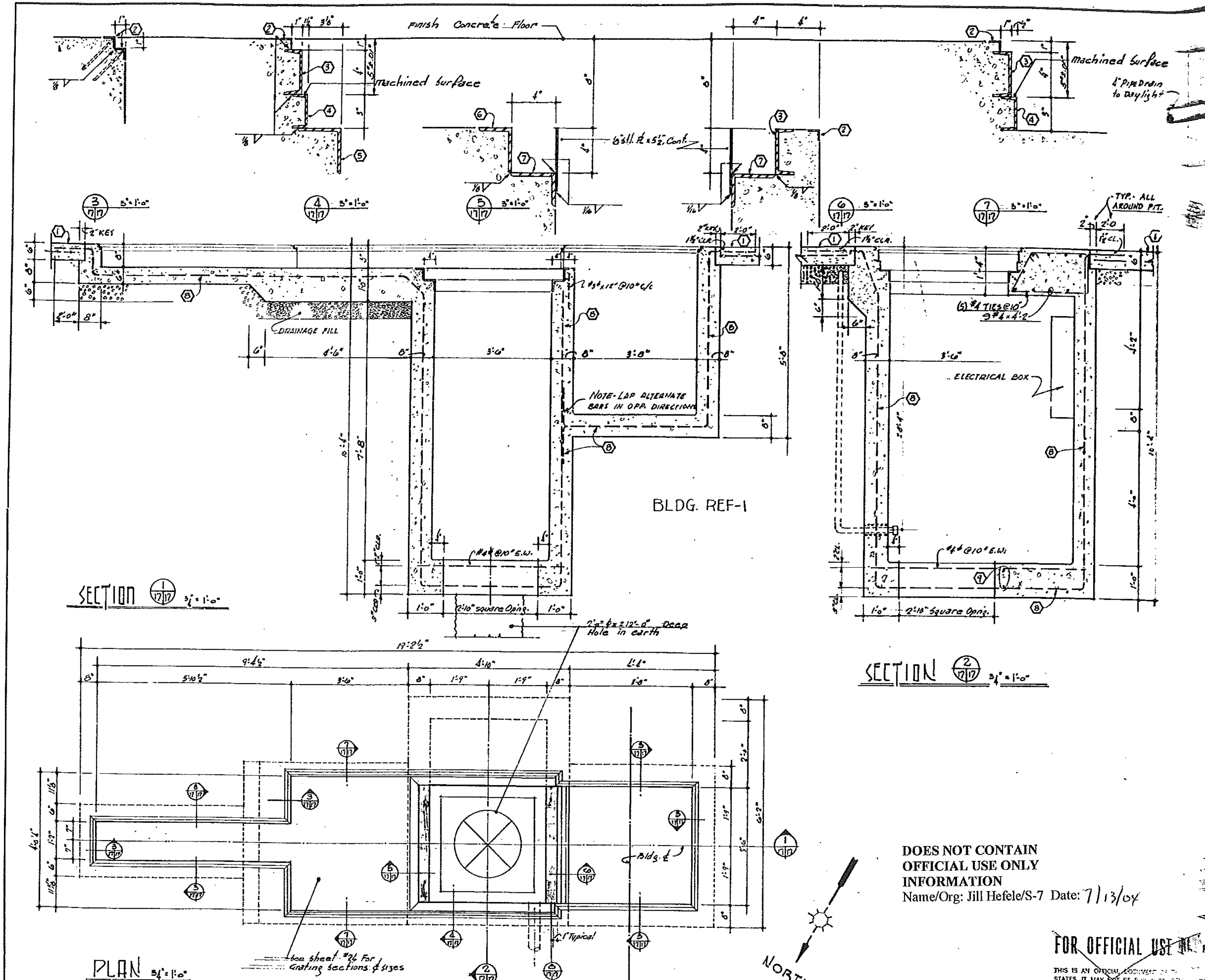
REC'D ENG-3 LOGGED VAULT

LAB JOB 2517 L.A.S.L. DWG. NO. ENG-C 30351



NOTES:

1. = 6" SLAB (W/ #4 Φ @ 12" E.W. @ MID-DEPTH) ON 6" DRAINAGE FILL ON COMPACT EARTH.
2. = L-1" x 1" x 1/8": #2 Φ x 4" ANCH. @ 12" C/C
3. = 4 ⊔ 5.4 : #3 Φ x 6" ANCH. @ 12" C/C
4. = 3 ⊔ 4.1 : #4 Φ x 6" ANCH. @ 12" C/C
5. = L-4" x 4" x 1/4": #4 Φ x 6" ANCH. @ 12" C/C
6. = L-4" x 3" x 3/16" (LLV): #4 Φ x 6" ANCH. @ 12" C/C
7. = L-3" x 4" x 3/16" (LLH): #4 Φ x 6" ANCH. @ 12" C/C
8. = CONT. REINF.: #4 Φ @ 10" C/C EACH WAY. LAP 12" @ SPLICES. PLACE @ MIDDLE OF WALLS & SLABS EXCEPT WHERE OTHERWISE SHOWN.
9. = ADD 2 #6 Φ x 4'-6"

GENERAL NOTE: AT CORNERS OF PC'S 2 THRU 7: MITER, WELD, & GRIND TOP SURFACE @ JOINTS.

AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO. AT(29-1)-1675
SUBMITTED
RECOMMENDED
APPROVED

DOES NOT CONTAIN OFFICIAL USE ONLY INFORMATION
Name/Org: Jill Hefele/S-7 Date: 7/13/04

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17 OF 25
18 26

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO
CALIBRATION TEST FACILITY TA-3
AND
RADIATION EXPOSURE FACILITY TA-51
LOS ALAMOS, NEW MEXICO

RADIATION EXPOSURE FACILITY TA-51
ARCHITECTURAL
PIT PLAN AND DETAILS

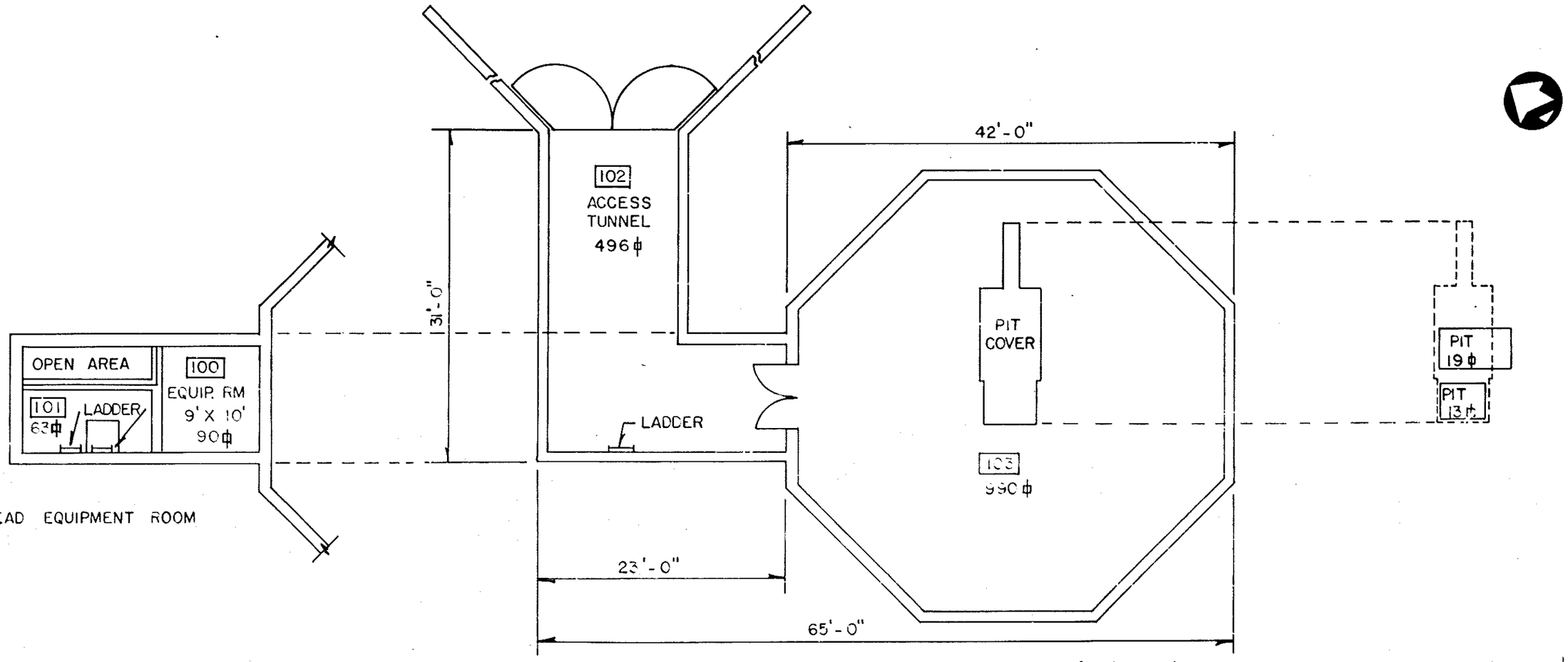
KENNETH S. CLARK
ARCHITECT – ENGINEER
EAST PALACE AVENUE SANTA FE, NEW MEXICO

DRAWING NO. LA-EQ-17/25 SHEET 18 OF 26

DRAWN D.O., R.W. | SCALE AS SHOWN | DATE 17 JULY 61

REC'D ENG-3 ... LOGGED ... VAULT ...
JOB 2517
L.A.S.L. DWG. NO. ENG-C 30352

83489



3/32" = 1'-0"

0' 5' 10' 15' 20' 25'

GRAPHIC SCALE

TOTAL $\frac{ft^2}{1671}$

MF

REV.	DATE	REVISION	BY	CKD.	APP.
4	9-27-83	REDRAWN & REVISED TO STATUS OF 09-27-83	H&N		

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

RADIATION EXPOSURE BUILDING
FLOOR PLAN

BLDG. REF. - 1 TA-5i

SEC. CLASSIFICATION	
CLASS.	U
REVIEWER	
DATE	11-7-83

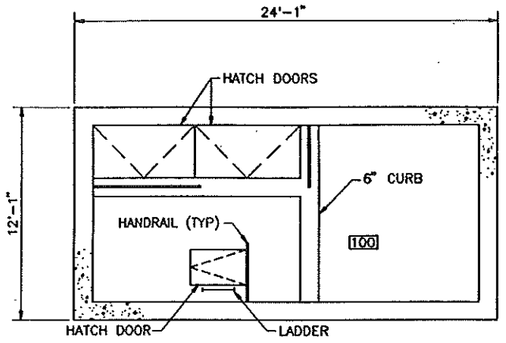
SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo		

DRAWN	J.C. - H&N	DATE	SHEET NO.	DRAWING NO.
CHECKED		9-27-83	1 OF 1	ENG-R3287

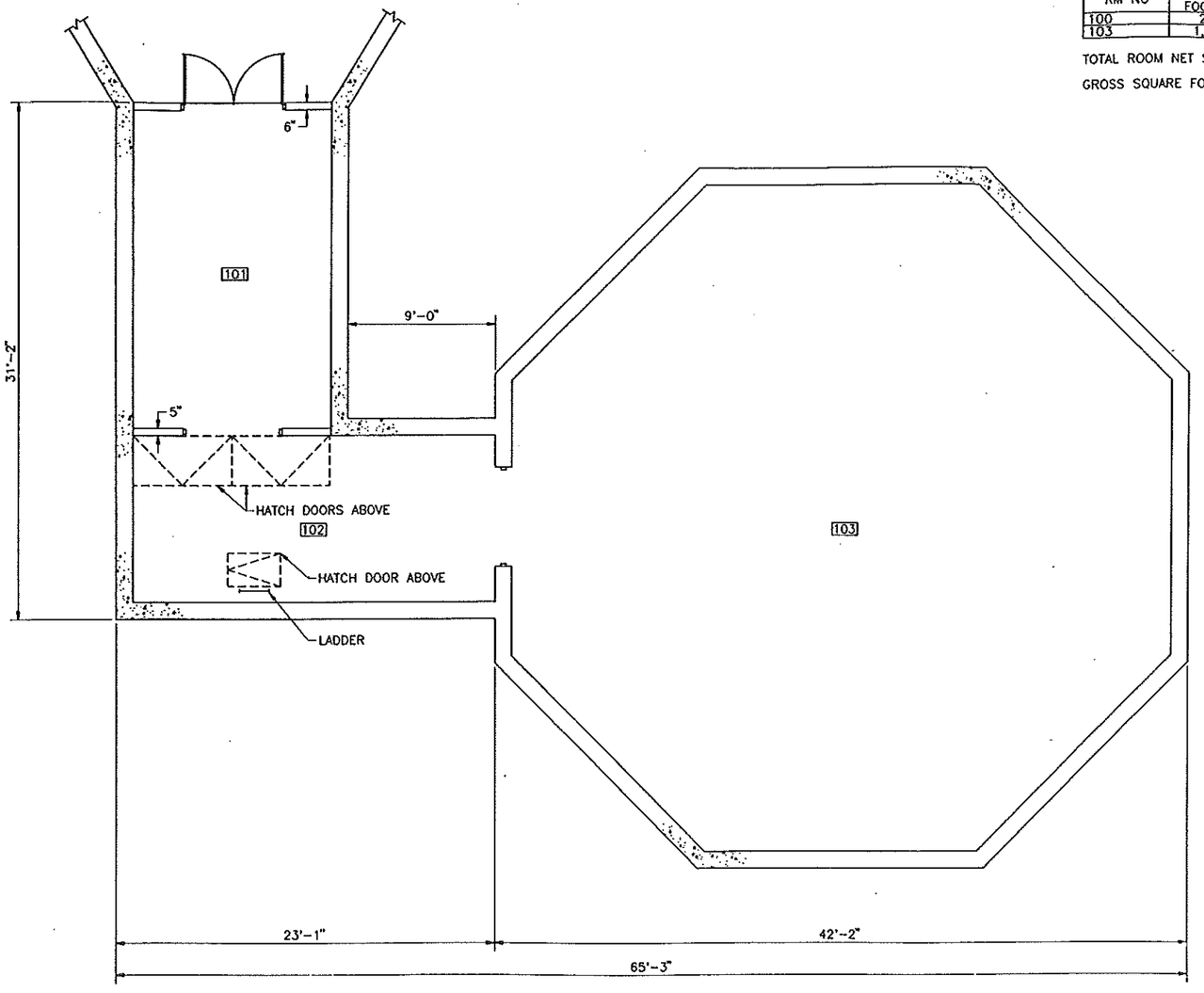
ROOM INFORMATION CHART					
RM NO	NET SQ FOOTAGE	RM NO	NET SQ FOOTAGE	RM NO	NET SQ FOOTAGE
100	222	101	234	102	229
103	1,338				

TOTAL ROOM NET SQUARE FOOTAGE (BUILDING) = 2,023

GROSS SQUARE FOOTAGE (BUILDING) = 2,311



EQUIPMENT ROOM ABOVE RM 102



LEGEND

CONCRETE
WOOD OR METAL STUD

RECORD FLOOR PLAN

SCALE: 1/4" = 1'-0"

4 3 2 1 0 4 8 16
GRAPHIC SCALE

N

NOTES

1. ALL EXTERIOR WALLS ARE 12" THICK UNLESS OTHERWISE NOTED.
2. ALL INTERIOR WALLS ARE 12" THICK UNLESS OTHERWISE NOTED.
3. REFERENCE DRAWING ENG-R3287.
4. ROOM NET SQUARE FOOTAGE IS COMPUTED BY MEASURING FROM THE INSIDE FACE OF EXTERIOR WALLS TO THE CENTERLINE OF ALL OTHER WALLS. AREAS SHOWN ARE ROUNDED TO THE NEAREST SQUARE FOOT.
5. GROSS SQUARE FOOTAGE IS EQUAL TO ALL FLOOR AREA (INCLUDING ALL OPENINGS IN FLOOR SLABS) MEASURED TO THE OUTER SURFACES OF EXTERIOR OR ENCLOSING WALLS, AND INCLUDES ALL FLOORS, MEZZANINES, HALLS, VESTIBULES, STAIRWELLS, SERVICE AND EQUIPMENT ROOMS, PENTHOUSES, VAULTS, AND ENCLOSED PASSAGES.
6. DIMENSIONS SHOWN ARE ROUNDED TO THE NEAREST INCH.

RECD LOGGED TO VAULT

FIELD VERIFIED 8-4-95

MT	NO	DATE	CLASS REV	DESCRIPTION	DWN	VER	CHKD	SUB	APP

JOHNSON CONTROLS

AS-BUILT RECORD FLOOR PLAN
RADIATION EXPOSURE BUILDING
ARCH: RECORD FLOOR PLAN

DRAWN M.VELASQUEZ
VERIFIED MV/TG
CHECKED C. SANDOVAL
DATE 8-17-95

BLDG 1001 TA-54

SUBMITTED JERRY FORTE
APPROVED FOR RELEASE FRED THOMPSON 9/11/95

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

SHEET 1 OF 1

CLASSIFICATION U REVIEWER T. GUSDORF DATE 8-31-95

PROJECT ID 7556

DRAWING NO AB502

REV

JCI NO 91-011

LANL TA- Building # 54-1002

Camera 984244

Frame #s DCP_4780 and DCP_4781

Surveyor(s) S. McCarthy, J. Ronquillo, N. Naranjo

Date 8/17/2006

Los Alamos National Laboratory
RMT Historic Building Survey Form

Building Name Equipment Building UTMs easting 385507 northing 3967715 zone 13

Legal Description: Map Friioles Ouad 2002 tnsp 19N range 6E sec

Current Use/ Function Equipment Building Original Use/ Function Equipment Building

Date (estimated) Date (actual) 1962 Property Type Support

Type of Construction

Pre-Fabricated Metal ☐ Steel Frame ☐ Wood Frame ☐ CMU ☑ Reinforced Concrete ☐

Other Type of Construction # of Stories 1

Foundation Concrete Slab

Exterior CMU-Exterior ☑ Reinforced Concrete-Exterior ☐ Steel (galvanized) ☐ Steel (corrugated) ☐

Wood Siding ☐ Asbestos Shingles-Exterior ☐ In-Fill Panels ☐ Other-Exterior

Exterior Treatment (painted, stuccoed, etc) Painted

Exterior Features (docks, speakers, lights, signs, etc) Signage, lightning rods

Addition CMU-Addition ☐ Reinforced Concrete-Addition ☐ Steel (galvanized)- Addition ☐ Wood ☐

Steel (corrugated)-Addition ☐ Asbestos Shingles-Addition ☐ Other- Addition

Exterior Treatment-Addition

Exterior Features-Addition

Roof Form Slanted/Shed ☐ Gable ☑ Other Roof Type

Degree of Pitch/ Slope Slight

Roof Materials Corrugated Metal ☐ Rolled Asphalt ☐ Asbestos Shingles ☐ 4-Ply Built Up ☐

Other Roof Materials The very low pitched gable roof consisting of 2 in. by 6 in. wood joists covered by wood sheathing and a built-up tar and gravel roofing system. The roof overhangs the building walls by 1 ft 4 in.

Window Type Casement ☐ Single Hung Sash ☐ Double Hung Sash ☐ Fixed Window ☐

Other Window Type none

# of Each Window Type/ Comments

Glass Type Clear ☐ Wire Glass ☐ Opaque ☐ Painted Glass ☐ Glass Block ☐

Light Pattern

Door Type Personnel Door Types Exterior Fire Door ☐ Single ☑ Double ☐ Roll-up ☐ Sliding ☐
Hollow Metal ☑ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☑

Interior Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐
Hollow Metal ☐ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☐

Equipment Door Types Exterior Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐
Hollow Metal ☐ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☐

Interior Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐
Hollow Metal ☐ Solid Metal ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☐

# of Each Door Type/Comments: Single access door.

Interior Wall Gypsum Board ☐ Reinforced Concrete- Interior ☐

CMU- Interior ☐ Plywood ☐ Other- Interior

In-Wall Electrical Wiring ☐ On-Wall Electrical Wiring ☐

Ceiling Drop Ceiling ☐

Interior Comments (Equipment, etc)

Degree of Remodeling Unknown/None

Condition Excellent ☐ Good ☑ Fair ☐ Deteriorating ☐ Contaminated ☐ Burned ☐

Associated Buildings ☐

If yes, list building names and #s TA-54-1001, -1003, -1004, and -1009

Integrity Good

Significance Eligible

Eligible Under Criterion A ☑ B ☐ C ☐ D ☐ Not Eligible ☐

DOE Themes

Nuclear Weapon Components and Assembly ☐

Nuclear Weapon Design and Testing ☐

Nuclear Propulsion ☐

Peaceful Uses: Plowshare, Nuclear Medicine, Nuclear Energy, Nuclear Science ☑

Energy and Environment: Research and Design Projects ☐

LANL Themes

Weapons Research and Design, Testing, and Stockpile Support ☐ Super Computing ☐

Reactor Technology ☐ Biomedical/Health Physics ☑ Strategic and Supporting Research ☐

Environment/Waste Management ☐ Administration and Social History ☐ Architectural History ☐

Recommendations/ Additional Comments

Architectural Features (elevations)

TA-54-1002 is a one-story, rectangular-in-plan structure measuring 7 ft 4 in. by 9 ft 4 in. in size. The small building is constructed with concrete floor slab, concrete masonry unit walls, and a very low pitched gable roof consisting of 2 in. by 6 in. wood joists covered by wood sheathing and a built-up tar and gravel roofing system. The roof overhangs the building walls by 1 ft 4 in. A single painted hollow metal door provides access into the small building. A large vent stack protrudes from the building's roof and is supported by insulated guy wires. A cable tray extends out from the building's east side and connects to building TA-54-1003. The building houses the mechanism for the three-ton hoist in TA-54-1001.

Total sq ft 48 net

Architect/ Builder Kenneth S. Clark, Architect -Engineer

Alterations

List of Drawings (Cntrl + Enter for para break)

ENG-C 30353
Sheet 19 of 26
Radiation Exposure Facility TA-51 (now TA-54)
TA-54-1002 (formerly TA-51-2)
Architectural
Lift & Control Room Plans
July 17, 1961

ENG-C 30356
Sheet 22 of 26
Radiation Exposure Facility TA-51 (now TA-54)
TA-54-1002 (formerly TA-51-2)
Mechanical & Electrical
Lift & Control Room Plans
July 17, 1961

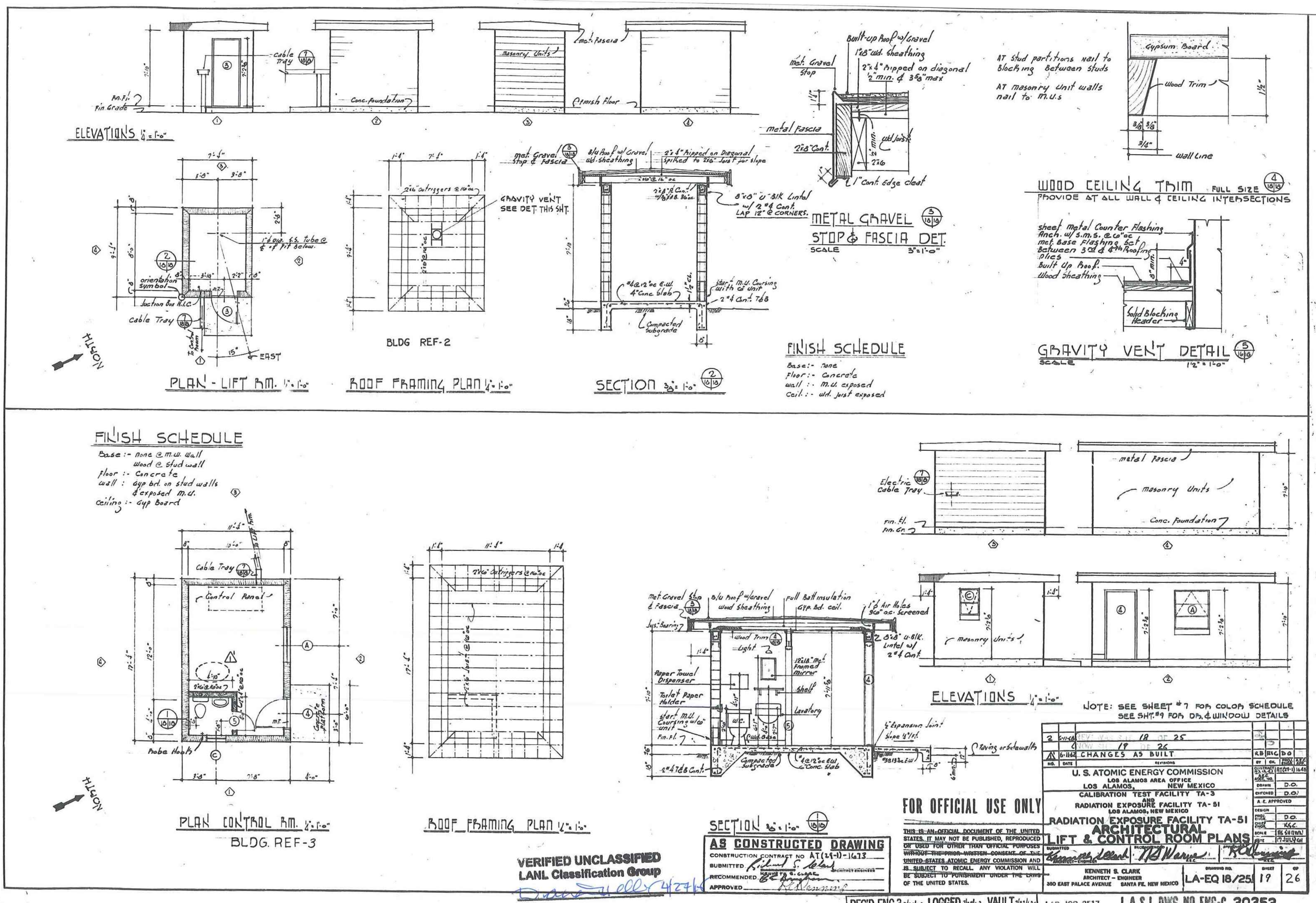
ENG-C 30338
Sheet 4 of 26
Radiation Exposure Facility TA-51 (now TA-54)
TA-54-1002 (formerly TA-51-2)
Site
Site Improvement Details
July 17, 1961

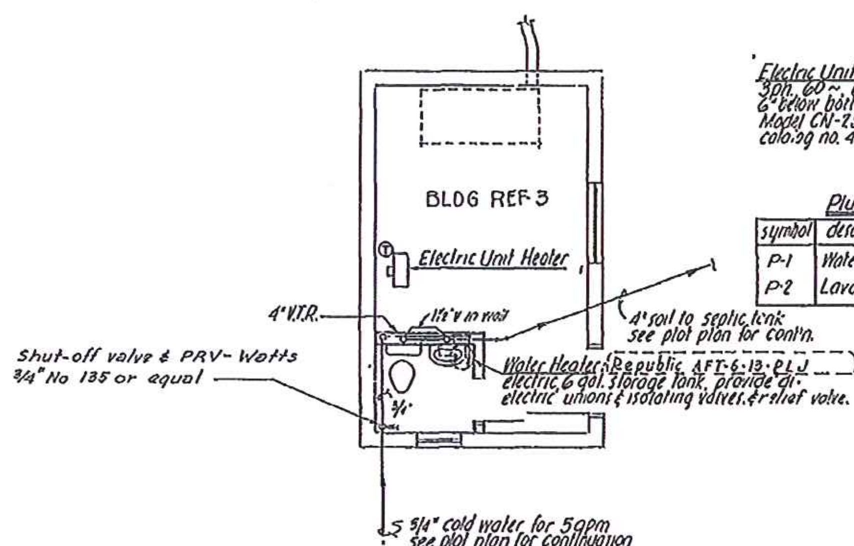
ENG-R 3288
Sheet 1 of 1
Lift Building, TA-51-2 (now TA-54-1002)
Floor Plan
December 24, 1962

ENG-C 45713
Sheet 1 of 6
TA-51-1001 and -1002
Ventilation & Power Backup
Mechanical
Plan, Sections, Elevations, Detail, & Location Plan

TA-54-1002 on top of TA-54-1001 East side

TA-54-1002 East side



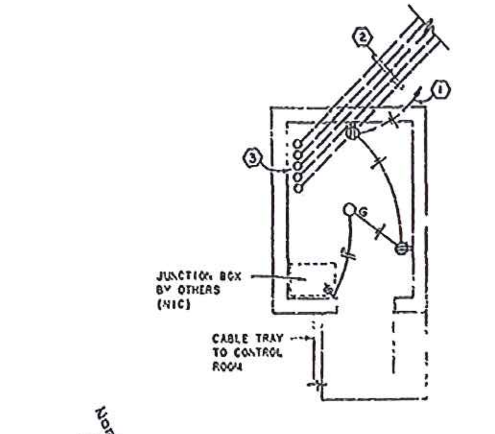


MECHANICAL
CONTROL ROOM
SCALE: ¼" = 1'-0"

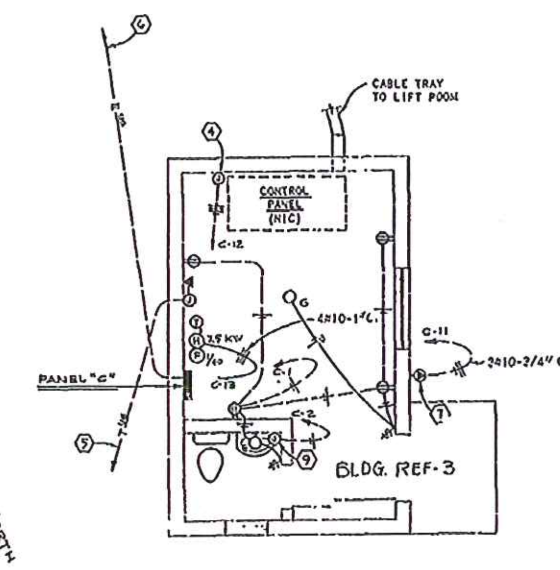
Electric Unit Heater: Cap 22,000 btuh, 208v, 3ph, 60~ complete w/ thermostat installed 6" below bottom of core of unit. Electromode Model CN-25 Catalog no. 3260-v, thermostat catalog no. 4414 or equal. Fan cap. 550 cfm.

Plumbing Fixture Schedule

symbol	description	trap	vent	CW	HW
P-1	Water Closet	3	2	½	
P-2	Lavatory	1½	1½	½	½



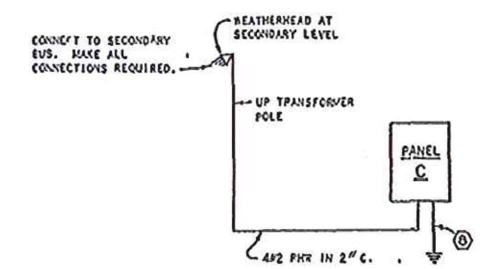
ELECTRICAL
LIFT ROOM REF-2
SCALE: ¼" = 1'-0"



ELECTRICAL
CONTROL ROOM
SCALE: ¼" = 1'-0"

NOTES–

1. DOWN TO RECEPTACLE IN RADIATION EXPOSURE ROOM.
2. FIVE 4-INCH CONDUITS DOWN TO JUNCTION BOX IN RADIATION EXPOSURE ROOM.
3. STUB CONDUITS UP 1'-6" AND CAP.
4. J-BOX FOR FUTURE CONNECTION OF FUTURE CONTROL PANEL. MOUNT 1'-0" ABOVE FLOOR OR AS DIRECTED.
5. 1-INCH EMPTY CONDUIT (PROVIDE PULL WIRE) 3'-0" MINIMUM BELOW GRADE TO CORNER POLE. EXTEND CONDUIT UP POLE 6-FEET AND BUSH. SEE PLOT PLAN.
6. INSTALL 4#2 RHW IN 2" CONDUIT 2'-0" MINIMUM BELOW GRADE TO TRANSFORMER POLE. SEE PLOT PLAN.
7. RECEPTACLE FOR TRAILER. MOUNT 4'-0" ABOVE GRADE.
8. 1#1/0 IN 1" C. CONDUIT TO EXTEND 2'-0" OUT FROM BUILDING AND 2'-0" BELOW GRADE. CONNECT GROUND CONDUCTOR TO MAIN WATER LINE, EXHAUST STACK AND TO CHAIN LINK FENCE. SEE SHEETS 2 & 3.
9. J-BOX FOR CONNECTION TO HOT WATER HEATER.



POWER RISER DIAGRAM
NO SCALE

PANEL SCHEDULE	
PANEL C	120/208Y-3Ø-4W-225 AMP MAINS WITH 70 AMP 3P MAIN BREAKER. SURFACE MOUNTED, BOTTOM FEED. 2 - 20A SP BRANCH BREAKERS CCTS 1,2 4 - 20A SP BRANCH BREAKERS CCTS 3-6 (SPARES) 4 - 20A SP SPACES CCTS 7-10 (FUTURE) 1 - 30A 2P BRANCH BREAKER CCT 11 1 - 20A 3P BRANCH BREAKER CCT 12 (FUTURE CONTROL PANEL) 1 - 30A 3P BRANCH BREAKER CCT 13 ELECTRIC HEATER

AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO AT(29-1)-1613
SUBMITTED Richard S. Clark — KENNETH S. CLARK
RECOMMENDED
APPROVED

GENERAL NOTES–

1. FOR ELECTRICAL LEGEND SEE SHEET 11.
2. FOR FIXTURE SCHEDULE SEE SHEET 11.

NO.	DATE	REVISIONS	BY	CK		
3	8-11-62	21 25				
		22 26				
2	6-11-62	CHANGES AS BUILT	RB	RCC	DO	
1	9-61	ADDENDUM #1		DO	KSC	

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

CALIBRATION TEST FACILITY TA-3
AND
RADIATION EXPOSURE FACILITY TA-51
LOS ALAMOS NEW MEXICO

RADIATION EXPOSURE FACILITY TA-51
MECHANICAL & ELECTRICAL
LIFT & CONTROL ROOM PLANS

SUBMITTED Kenneth S. Clark, ARCHITECT-ENGINEER — RECOMMENDED N.S. Marie, AEC — APPROVED AEC

KENNETH S. CLARK
ARCHITECT – ENGINEER
350 EAST PALACE AVENUE SANTA FE, NEW MEXICO

CONTRACT NO. AT(29-1)-1613 — DRAWN RC / CHECKED RC — SCALE AS NOTED — DATE 7/17/61

DRAWING NO. LA-EQ 21/25.2 — SHEET 22 OF 26

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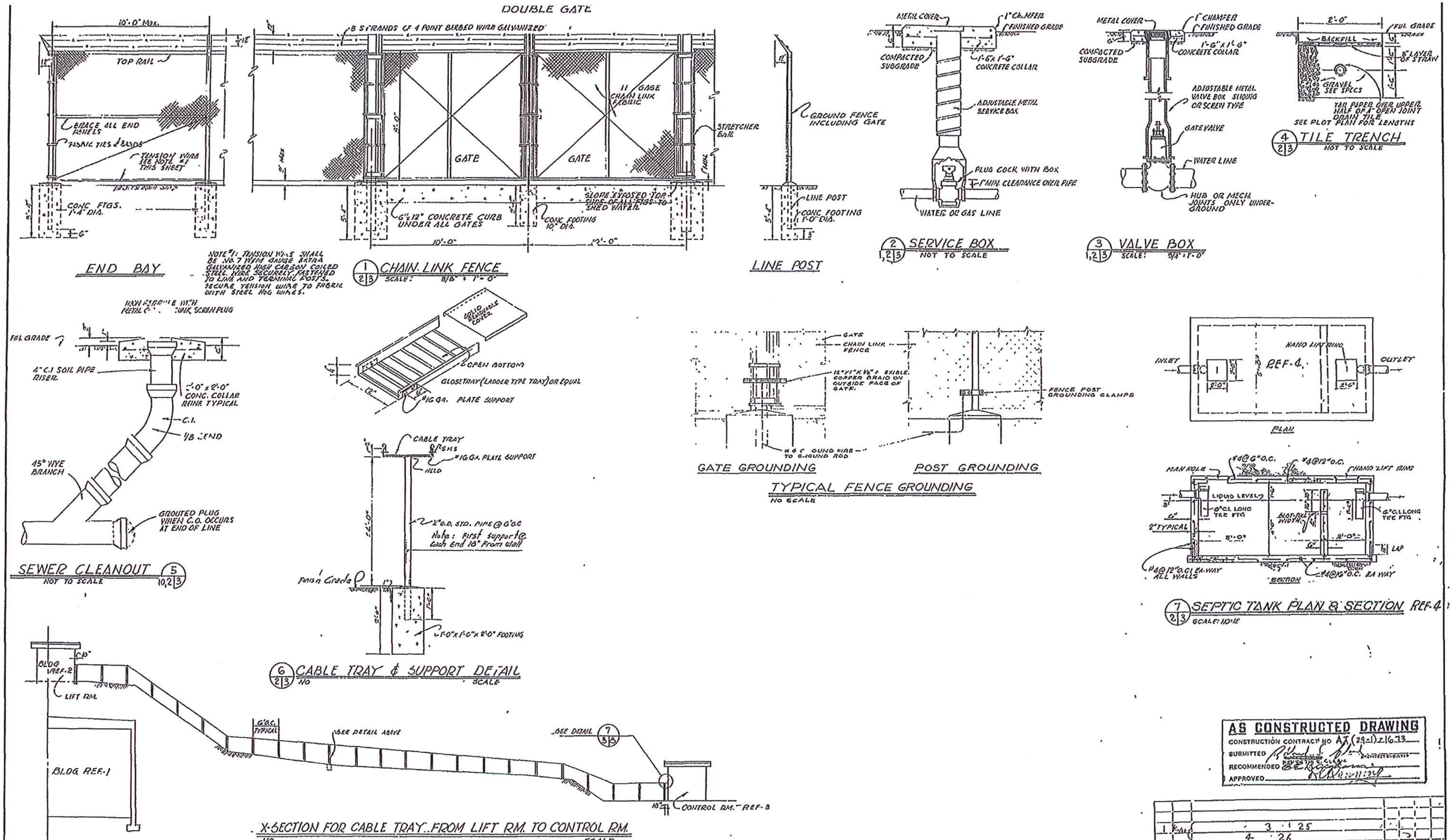
LAB JOB 2517 L.A.S.L. DWG. NO. ENG-C 30356



AS CONSTRUCTED DRAWING

CONSTRUCTION CONTRACT NO AT(29-1)-1673

SUBMITTED ______ ARCHITECT-ENGINEER

RECOMMENDED ______

APPROVED ______

NO	DATE	REVISIONS
1		3 · 1 25
		4 · 26

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

CALIBRATION TEST FACILITY TA-3
AND
RADIATION EXPOSURE FACILITY TA-51
LOS ALAMOS, NEW MEXICO

SITE

SITE IMPROVEMENT DETAILS

DRAWN: B.G. CHECKED: D.O. DESIGNED: D.O. / R.S.C. SCALE: AS SHOWN DATE: 17 JULY 61

SUBMITTED: Kenneth S. Clark, ARCHITECT-ENGINEER — RECOMMENDED: AEC — APPROVED: AEC

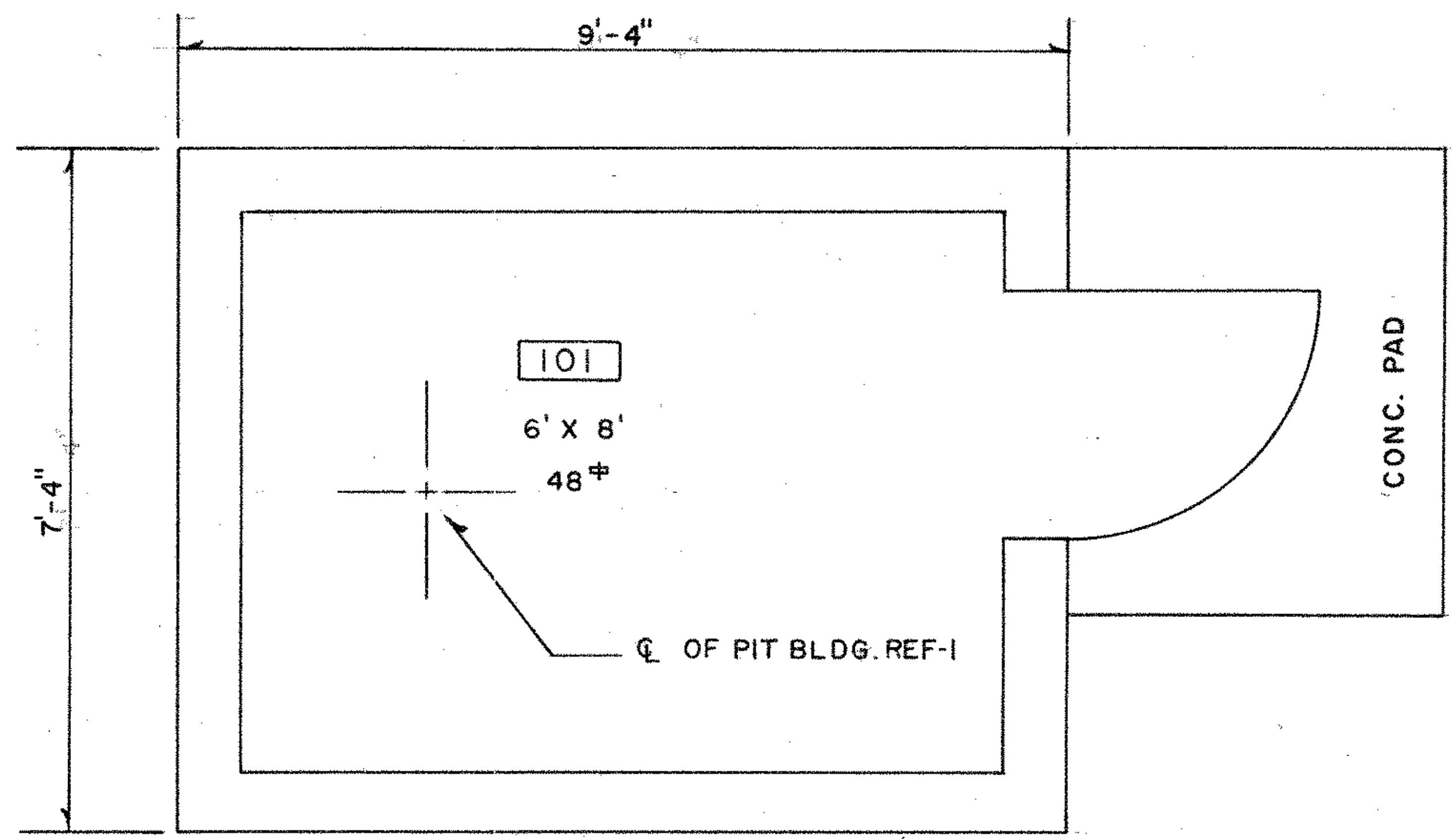
KENNETH S. CLARK
ARCHITECT – ENGINEER
350 EAST PALACE AVENUE SANTA FE, NEW MEXICO

DRAWING NO. LA-EQ-3/25 SHEET 4 OF 26

L.A. JOB 2517 L.A.S.L. DWG. NO. ENG-C 30338

NO.	DATE	REVISIONS	BY	CHKD	GRP. LDR.	ENG. D.O.
1	4-5-74	REVISED TO STATUS OF 4-5-74	DAD			

MF



REVIEWER
CLASS DATE

1/2"=1'-0"

0 1 2 3 4 5
GRAPHIC SCALE

TOTAL SQ. FT. 48

MF

REV.	DATE	REVISION	BY	CKD.	APP.
2	6-8-84	REVISED TO STATUS OF 6-8-84	H&N		

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

LIFT BUILDING
FLOOR PLAN

BLDG. REF-2 TA-51

SEC. CLASSIFICATION	
CLASS.	U
REVIEWER	
DATE	6-11-84

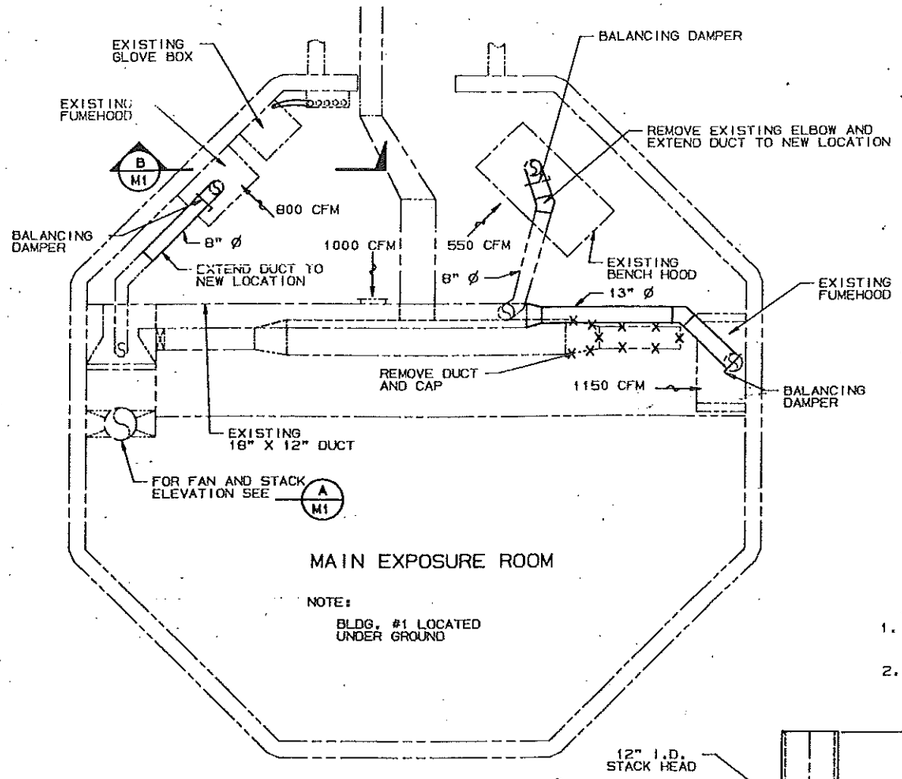
SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo		W. T.

DRAWN: BELL
CHECKED: H&N
DATE: 12-24-62
SHEET NO. 1 OF 1
DRAWING NO. ENG-R 3288

K+E ALBANENE 195L TRACING PAPER 0007

REC'D 1/3/63 LOGGED 1/3

REC'D ... LOGGED ✓ TO VAULT 7/11/84



PLAN BLDG. 1 (NEW & REMOVAL)

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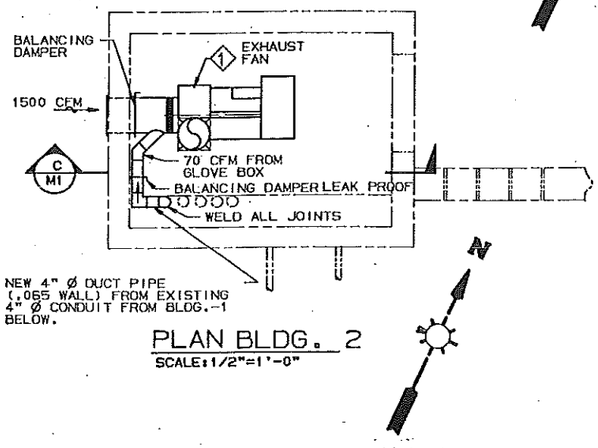
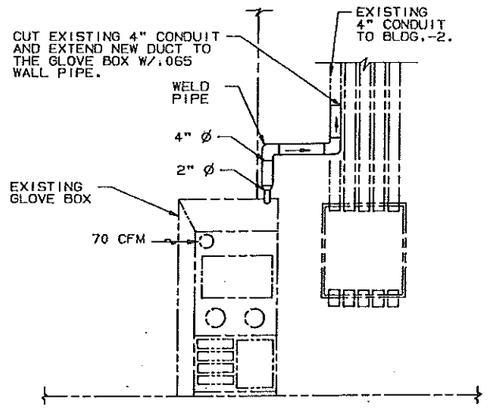


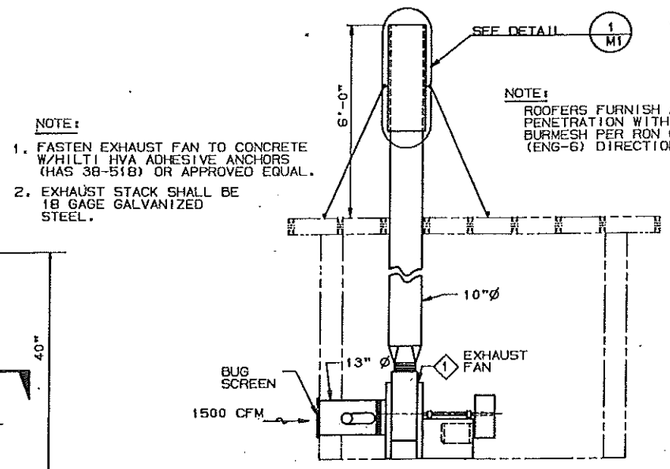
PLAN BLDG. 2

SCALE: 1/2"=1'-0"



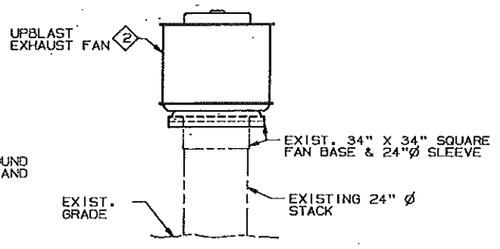
ELEVATION B M1

SCALE: 1/2"=1'-0"



ELEVATION C M1

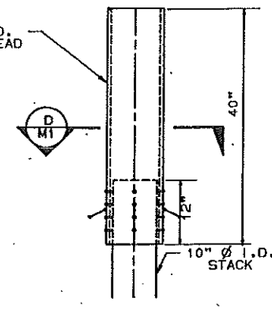
SCALE: 1/2"=1'-0"



ELEVATION A M1

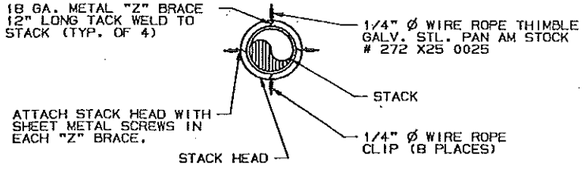
NTS

NOTE:
1. MOUNT EXHAUST FAN ON THE FAN BASE W/ 1/4" NEOPRENE BETWEEN BASE & FAN.
2. FASTEN FAN TO BASE & MAKE SURE SLEEVE IS FASTENED TO 24" STACK PROPERLY.



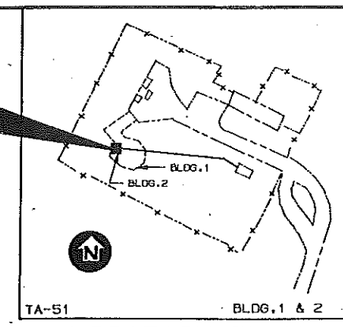
STACK HEAD DETAIL 1 M1

NTS



SECTION D M1

NTS



NOTE:
SEAL AIRTIGHT EXISTING CONDUIT AT ALL FITTINGS W/HARDCAST DT-TAPE SEE GENERAL NOTES.

LOCATION PLAN

LEGEND:

- EXISTING FEATURES
- NEW CONSTRUCTION
- EXISTING FEATURES TO BE REMOVED

AUTHORIZED BY D.R.R. FOR:

HSE-DO 4/21/89
ENG-5 4-25-89
ENG-8
ENG-3

THIS JOB SHALL BE INSPECTED BY:
REID ZIRKLE ENG-5
PHONE: 7-9908 PAGE: 104-1326
ANY CHANGES SHALL BE APPROVED BY:
JOHN GONZALES ENG-3
PHONE: 7-5293

NO.	DATE	CLASS REV.	REVISIONS	DRN	DES	REL	REQ SPT	REQ D.O.	REC	APP

Pan Am World Services, Inc.

VENTILATION & BACKUP POWER

MECHANICAL: PLAN, SECTIONS, ELEVATIONS, DETAIL, & LOCATION PLAN

BLDG. 1 & 2 TA-51

DRAWN	F. LOPEZ
DESIGN	JOHN GONZALES
CHECKED	D. NEIL
RELEASED	D. NEIL
DATE	4-26-89

SUBMITTED M. E. Smith C. E. Boyle — RECOMMENDED S. D. Rhodes — APPROVED R. J.

Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545

SHEET M1 — 1 OF 6

CLASSIFICATION U — REVIEWER S. D. Rhodes — DATE 4-27-89

LAB JOB NO. 10084-51 — DRAWING NO. C45713 — REV.

RECD LOGGED TO VAULT 7/6/89

P.A.# 89-041

LANL TA- Building # 54-1003

Camera 984244

Frame #s DCP_4782 through DCP_4785

Surveyor(s) S. McCarthy, J. Ronquillo, N. Naranjo

Date 8/17/2006

Los Alamos National Laboratory
RMT Historic Building Survey Form

Building Name Control Building UTMs easting 385552 northing 3967704 zone 13

Legal Description: Map Friioles Ouad 2002 tnsp 19N range 6E sec

Current Use/ Function Control Building Original Use/ Function Control Building

Date (estimated) Date (actual) 1962 Property Type Laboratory/Processing

Type of Construction

Pre-Fabricated Metal ☐ Steel Frame ☐ Wood Frame ☐ CMU ☑ Reinforced Concrete ☐

Other Type of Construction # of Stories 1

Foundation Concrete Slab

Exterior CMU-Exterior ☑ Reinforced Concrete-Exterior ☐ Steel (galvanized) ☐ Steel (corrugated) ☐

Wood Siding ☐ Asbestos Shingles-Exterior ☐ In-Fill Panels ☐ Other-Exterior

Exterior Treatment (painted, stuccoed, etc) Painted

Exterior Features (docks, speakers, lights, signs, etc) Signage, lightening rods, exterior conduit

Addition CMU-Addition ☐ Reinforced Concrete-Addition ☐ Steel (galvanized)- Addition ☐ Wood ☐

Steel (corrugated)-Addition ☐ Asbestos Shingles-Addition ☐ Other- Addition

Exterior Treatment-Addition

Exterior Features-Addition

Roof Form Slanted/Shed ☐ Gable ☐ Other Roof Type flat

Degree of Pitch/ Slope Slight

Roof Materials Corrugated Metal ☐ Rolled Asphalt ☐ Asbestos Shingles ☐ 4-Ply Built Up ☐

Other Roof Materials The flat roof is constructed with 2 in. by 6 in. wood joists covered with wood sheathing and built-up tar and gravel roof system. The roof overhangs the building walls by 1 ft 4 in.

Window Type Casement ☐ Single Hung Sash ☐ Double Hung Sash ☐ Fixed Window ☐

Other Window Type Awning and hopper.

# of Each Window Type/ Comments Single 3-light awning window on north side, single 2-light hopper window on east side

Glass Type Clear ☑ Wire Glass ☐ Opaque ☑ Painted Glass ☐ Glass Block ☐

Light Pattern: 1 three-light awning and 1 two-light hopper

Door Type

Personnel Door Types — Exterior: Fire Door ☐ Single ☑ Double ☐ Roll-up ☐ Sliding ☐ Hollow Metal ☑ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐ Louvered ☐ Painted ☑

Personnel Door Types — Interior: Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐ Hollow Metal ☐ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐ Louvered ☐ Painted ☐

Equipment Door Types — Exterior: Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐ Hollow Metal ☐ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐ Louvered ☐ Painted ☐

Equipment Door Types — Interior: Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐ Hollow Metal ☐ Solid Metal ☐ 1/2 Glazed ☐ Paneled ☐ Louvered ☐ Painted ☐

# of Each Door Type/Comments: Single painted hollow-metal door on north side.

Interior Wall: Gypsum Board ☐ Reinforced Concrete- Interior ☐ CMU- Interior ☐ Plywood ☐ Other- Interior ☐ In-Wall Electrical Wiring ☐ On-Wall Electrical Wiring ☐

Ceiling: Drop Ceiling ☐

Interior Comments (Equipment, etc):

Degree of Remodeling: Unknown/None

Condition: Excellent ☐ Good ☑ Fair ☐ Deteriorating ☐ Contaminated ☐ Burned ☐

Associated Buildings ☑

If yes, list building names and #s: TA-54-1001, -1002, -1004, and -109

Integrity: Good

Significance:

Eligible Under Criterion: A ☑ B ☐ C ☐ D ☐ Not Eligible ☐

DOE Themes

Nuclear Weapon Components and Assembly ☐ Nuclear Weapon Design and Testing ☐ Nuclear Propulsion ☐

Peaceful Uses: Plowshare, Nuclear Medicine, Nuclear Energy, Nuclear Science ☑ Energy and Environment: Research and Design Projects ☐

LANL Themes

Weapons Research and Design, Testing, and Stockpile Support ☐ Super Computing ☐

Reactor Technology ☐ Biomedical/Health Physics ☑ Strategic and Supporting Research ☐

Environment/Waste Management ☐ Administration and Social History ☐ Architectural History ☐

Recommendations/ Additional Comments:

Architectural Features (elevations)

TA-54-1003 is a one-story rectangula- in-plan building that measures 17 ft 4 in. by 11 ft 4 in. The simple building is constructed with a concrete perimeter foundation, 4 in. concrete floor slab and 8 in. concrete masonry unit walls. The flat roof is constructed with 2 in. by 6 in. wood joists covered with wood sheathing and built-up tar and gravel roof system. The roof overhangs the building walls by 1 ft 4 in.

A single painted hollow metal personnel door is located on the north side and provides the only access into the building. The north side of the building contains a single 3-lite awning style window currently housing a window air conditioning unit while the east side contains a 2-lite metal window.

Total sq ft 192 net

Architect/ Builder Kenneth S. Clark, Architect-Engineer

Alterations

List of Drawings (Cntrl + Enter for para break)

ENG-C 30353
Sheet 19 of 26
Radiation Exposure Facility TA-51 (now TA-54)
TA-54-1003 (formerly TA-51-3)
Architectural
Lift & Control Room Plans
July 17, 1961

ENG-C 30356
Sheet 22 of 26
Radiation Exposure Facility TA-51 (now TA-54)
TA-54-1003 (formerly TA-51-3)
Mechanical & Electrical
Lift & Control Room Plans
July 17, 1961

ENG-C 30338
Sheet 4 of 26
Radiation Exposure Facility TA-51 (now TA-54)
TA-54-1003 (formerly TA-51-3)
Site
Site Improvement Details
July 17, 1961

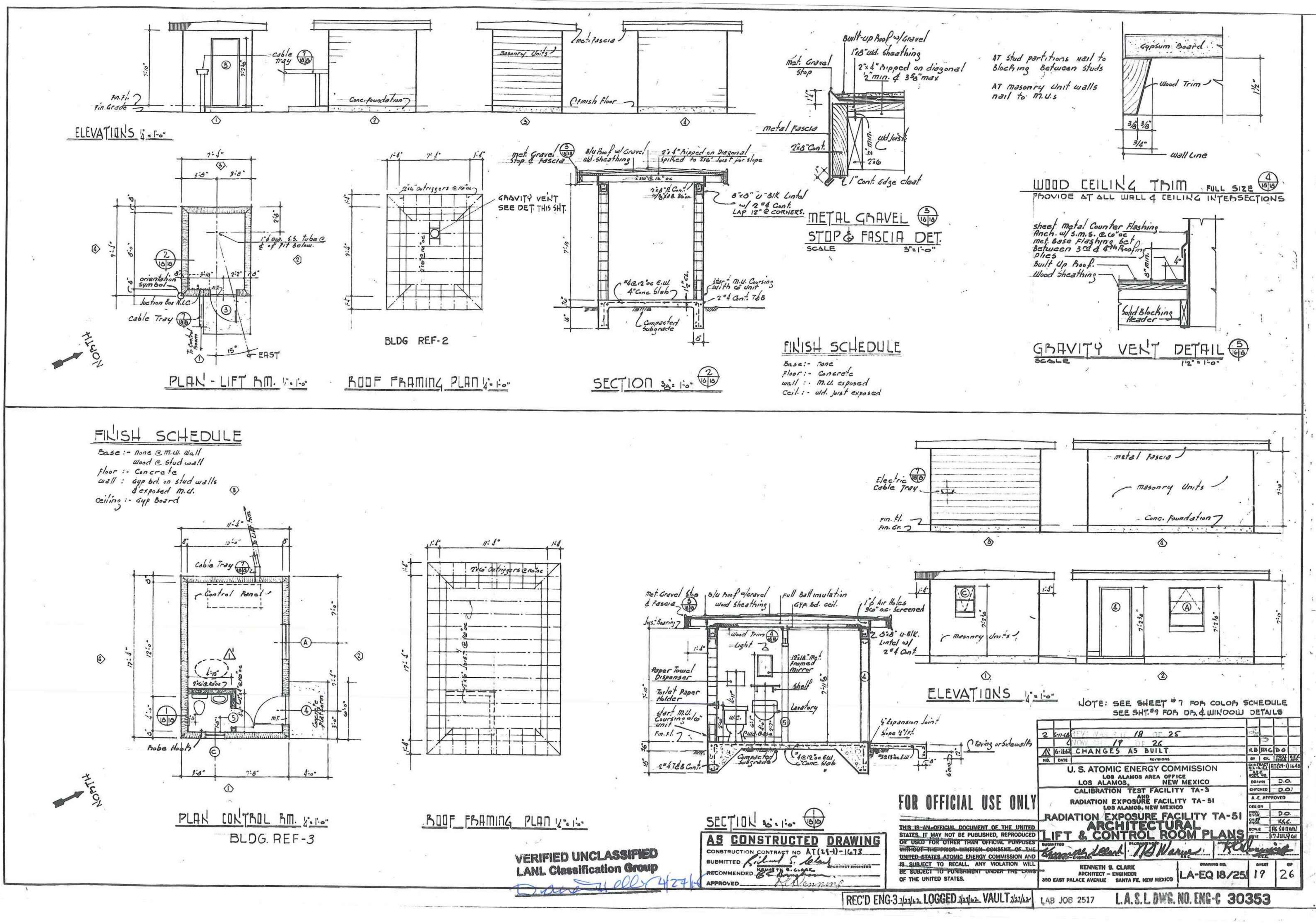
ENG AB 525
Sheet 1 of 1
Control Building, TA-54-1003
As-Built Record Floor Plan
October 4, 1995

TA-54-1003 Northeast side

TA-54-1003 Southeast and northeast sides

TA-54-1003 Southwest and southeast sides

TA-54-1003 Northwest and southwest sides


ELEVATIONS 1/4" = 1'-0"
PLAN - LIFT RM. 1/4" = 1'-0"
BLDG REF-2
ROOF FRAMING PLAN 1/4" = 1'-0"
SECTION 3/4" = 1'-0"
GRAVITY VENT SEE DET. THIS SHT.
METAL GRAVEL STOP & FASCIA DET. SCALE 3" = 1'-0"
FINISH SCHEDULE
Base :- none
Floor :- Concrete
wall :- m.u. exposed
Ceil. :- wd. joist exposed
WOOD CEILING TRIM FULL SIZE
PROVIDE AT ALL WALL & CEILING INTERSECTIONS
AT stud partitions nail to Blocking Between studs
AT masonry unit walls nail to m.u.s
GRAVITY VENT DETAIL SCALE 1 1/2" = 1'-0"
FINISH SCHEDULE
Base :- none @ m.u. wall
Wood @ stud wall
Floor :- Concrete
wall :- Gyp bd. on stud walls & exposed m.u.
ceiling :- Gyp Board
PLAN CONTROL RM. 1/4" = 1'-0"
BLDG. REF-3
ROOF FRAMING PLAN 1/4" = 1'-0"
SECTION 3/4" = 1'-0"
ELEVATIONS 1/4" = 1'-0"
NOTE: SEE SHEET #7 FOR COLOR SCHEDULE
SEE SHT. #9 FOR DR. & WINDOW DETAILS
AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO AT(29-1)-1673
SUBMITTED
RECOMMENDED
APPROVED
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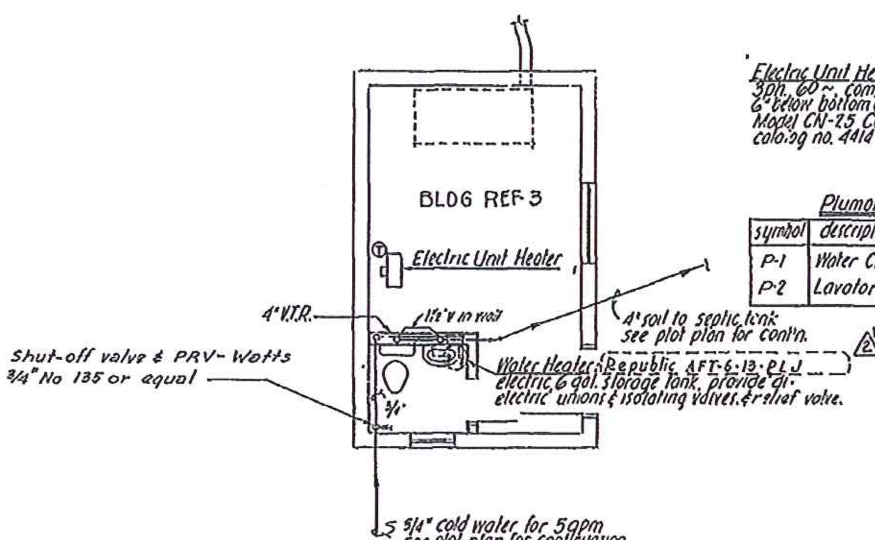
1 6-11-62 CHANGES AS BUILT
U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO
CALIBRATION TEST FACILITY TA-3
AND
RADIATION EXPOSURE FACILITY TA-51
LOS ALAMOS, NEW MEXICO
RADIATION EXPOSURE FACILITY TA-51
ARCHITECTURAL
LIFT & CONTROL ROOM PLANS
KENNETH S. CLARK
ARCHITECT - ENGINEER
350 EAST PALACE AVENUE SANTA FE, NEW MEXICO
LA-EQ 18/25
19
26
VERIFIED UNCLASSIFIED
LANL Classification Group
REC'D ENG-3 LOGGED VAULT
LAB JOB 2517
L.A.S.L. DWG. NO. ENG-C 30353

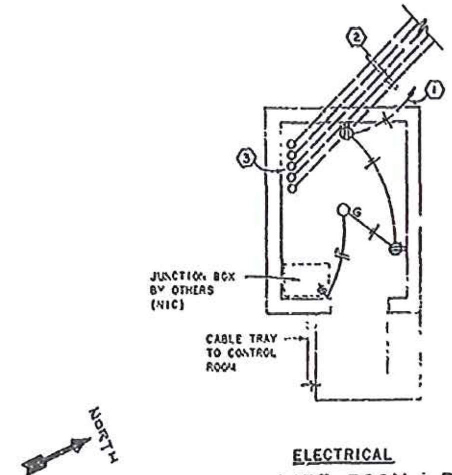


MECHANICAL
CONTROL ROOM
SCALE: ¼"=1'-0"

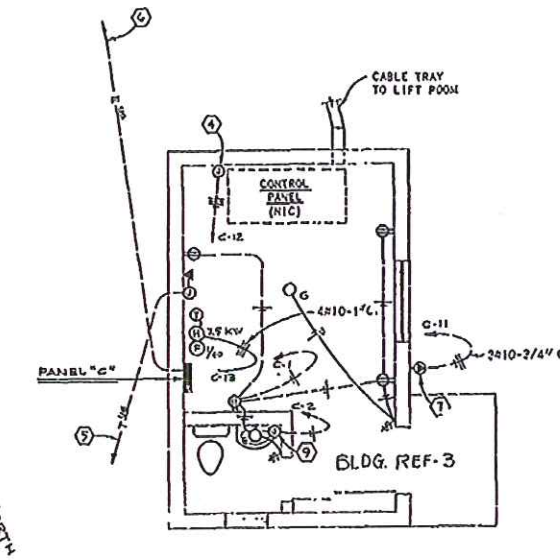
Electric Unit Heater: Cap 22,000 btuh, 208v. 3ph, 60~, complete w/ thermostat installed 6" below bottom of case of unit. Electromode Model CN-25 Catalog no. 3260-v, thermostat catalog no. 4414 or equal. Fan cap. 550 cfm.

Plumbing Fixture Schedule

symbol	description	trap	vent	C.W.	h.w.
P-1	Water Closet	3	2	½	
P-2	Lavatory	1½	1½	½	½



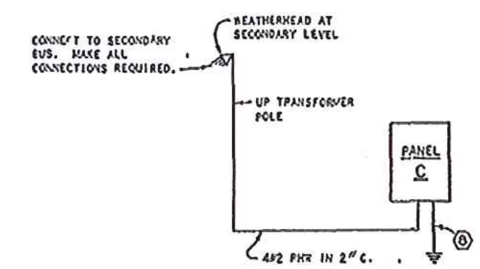
ELECTRICAL
LIFT ROOM REF-2
SCALE: ¼"=1'-0"



ELECTRICAL
CONTROL ROOM
SCALE: ¼"=1'-0"

NOTES–

1. DOWN TO RECEPTACLE IN RADIATION EXPOSURE ROOM.
2. FIVE 4-INCH CONDUITS DOWN TO JUNCTION BOX IN RADIATION EXPOSURE ROOM.
3. STUB CONDUITS UP 1'-6" AND CAP.
4. J-BOX FOR FUTURE CONNECTION OF FUTURE CONTROL PANEL. MOUNT 1'-0" ABOVE FLOOR OR AS DIRECTED.
5. 1-INCH EMPTY CONDUIT (PROVIDE PULL WIRE) 2'-0" MINIMUM BELOW GRADE TO CORNER POLE. EXTEND CONDUIT UP POLE 6-FEET AND BUSH. SEE PLOT PLAN.
6. INSTALL 4#2 RHW IN 2" CONDUIT 2'-0" MINIMUM BELOW GRADE TO TRANSFORMER POLE. SEE PLOT PLAN. (revision 1)
7. RECEPTACLE FOR TRAILER. MOUNT 4'-0" ABOVE GRADE.
8. 1#1/0 IN 1" C. CONDUIT TO EXTEND 2'-0" OUT FROM BUILDING AND 2'-0" BELOW GRADE. CONNECT GROUND CONDUCTOR TO MAIN WATER LINE, EXHAUST STACK AND TO CHAIN LINK FENCE. SEE SHEETS 2 & 3.
9. J-BOX FOR CONNECTION TO HOT WATER HEATER.



POWER RISER DIAGRAM
NO SCALE

PANEL SCHEDULE

PANEL C	120/208Y-3Ø-4W-225 AMP MAINS WITH 70 AMP 3P MAIN BREAKER. SURFACE MOUNTED, BOTTOM FEED. 2 - 20A SP BRANCH BREAKERS CCTS 1,2 4 - 20A SP BRANCH BREAKERS CCTS 3-6 (SPARES) 4 - 20A SP SPACES CCTS 7-10 (FUTURE) 1 - 30A 2P BRANCH BREAKER CCT 11 1 - 20A 3P BRANCH BREAKER CCT 12 (FUTURE CONTROL PANEL) 1 - 30A 3P BRANCH BREAKER CCT 13 ELECTRIC HEATER

AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO AT(29-1)-1613
SUBMITTED Richard S. Clark — KENNETH S. CLARK
RECOMMENDED
APPROVED

GENERAL NOTES–

1. FOR ELECTRICAL LEGEND SEE SHEET 13.
2. FOR FIXTURE SCHEDULE SEE SHEET 11.

NO.	DATE	REVISIONS	BY	CK	
3	8-11-62	21 25			
		22 26			
2	6-11-62	CHANGES AS BUILT	RB	REC	DO
1	9-61	ADDENDUM #1		DO	KSC

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

CALIBRATION TEST FACILITY TA-3
AND
RADIATION EXPOSURE FACILITY TA-51
LOS ALAMOS NEW MEXICO

RADIATION EXPOSURE FACILITY TA-51
MECHANICAL & ELECTRICAL
LIFT & CONTROL ROOM PLANS

SUBMITTED Kenneth S. Clark, ARCHITECT-ENGINEER — RECOMMENDED N. S. Marie — APPROVED

KENNETH S. CLARK
ARCHITECT – ENGINEER
350 EAST PALACE AVENUE SANTA FE, NEW MEXICO

DRAWING NO. LA-EQ 21/25.2 — SHEET 22 OF 26

CONTRACT AT(29-1)-1613 — DRAWN CC UEL — CHECKED KR GOS — SCALE AS NOTED — DATE 7/17/61

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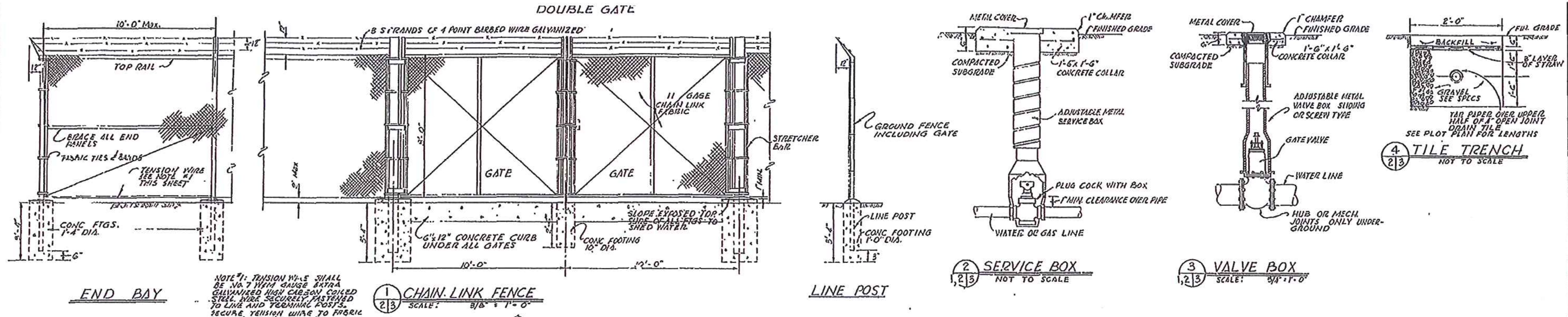
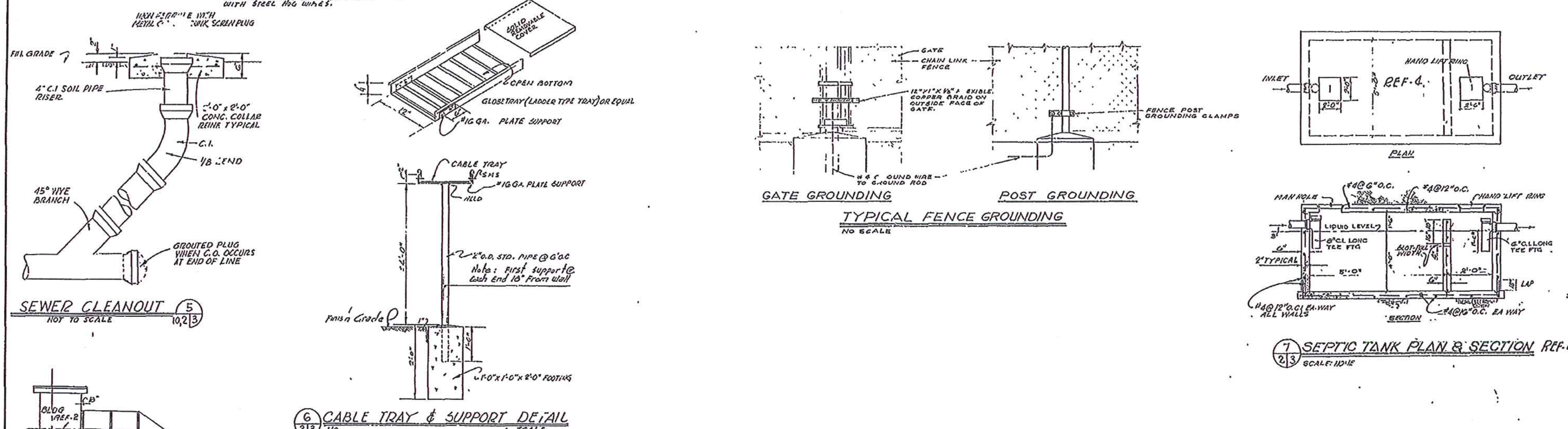
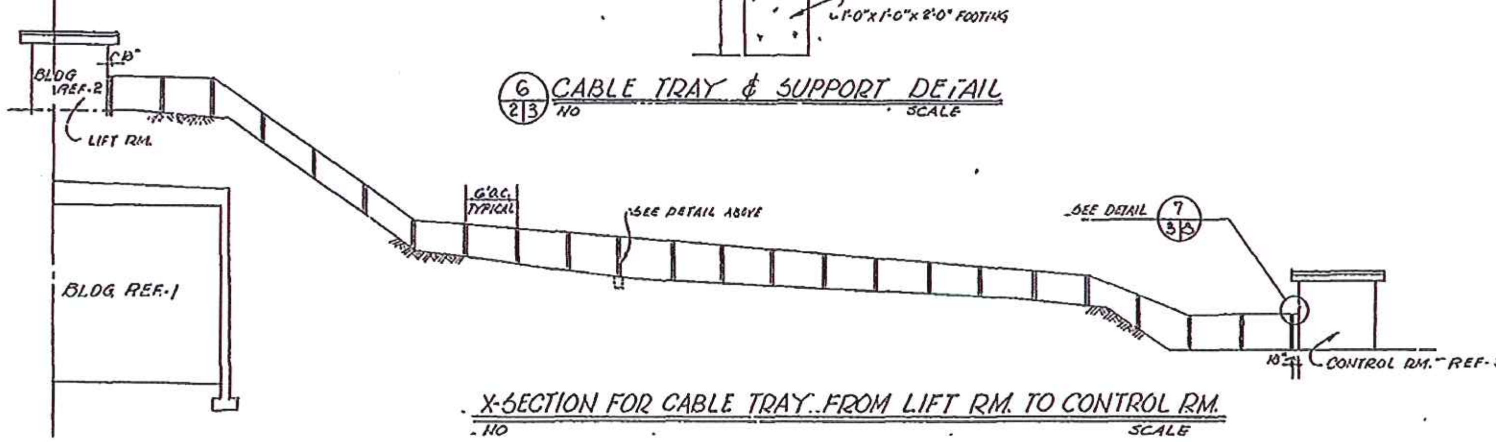
 LAB JOB 2517 L.A.S.L. DWG. NO. ENG-C 30356







AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO AT(29-1)-1613
SUBMITTED
RECOMMENDED
APPROVED

3	1 25
4	26

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO
CALIBRATION TEST FACILITY TA-3
AND
RADIATION EXPOSURE FACILITY TA-51
LOS ALAMOS, NEW MEXICO
SITE
SITE IMPROVEMENT DETAILS

KENNETH S. CLARK
ARCHITECT – ENGINEER
330 EAST PALACE AVENUE SANTA FE, NEW MEXICO

DRAWING NO. LA-EQ-3/25 SHEET 4 OF 26

SCALE AS SHOWN
DATE 7 JULY 61

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ROOM INFORMATION CHART					
RM NO	NET SQ FOOTAGE	RM NO	NET SQ FOOTAGE	RM NO	NET SQ FOOTAGE
101	138	101A	24		

TOTAL ROOM NET SQUARE FOOTAGE (BUILDING) = 162

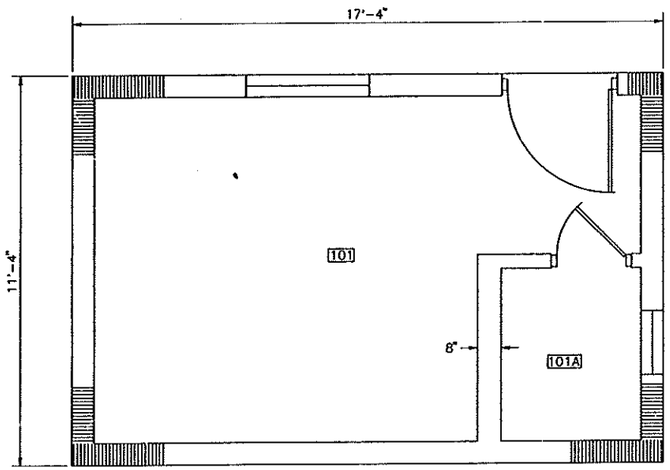
GROSS SQUARE FOOTAGE (BUILDING) = 197

LEGEND

CONCRETE BLOCK
WINDOW
WOOD OR METAL STUD

NOTES

1. ALL EXTERIOR WALLS ARE 8" THICK UNLESS OTHERWISE NOTED.
2. ALL INTERIOR WALLS ARE 5" THICK UNLESS OTHERWISE NOTED.
3. ROOM NET SQUARE FOOTAGE IS COMPUTED BY MEASURING FROM THE INSIDE FACE OF EXTERIOR WALLS TO THE CENTERLINE OF ALL OTHER WALLS. AREAS SHOWN ARE ROUNDED TO THE NEAREST SQUARE FOOT.
4. GROSS SQUARE FOOTAGE IS EQUAL TO ALL FLOOR AREA (INCLUDING ALL OPENINGS IN FLOOR SLABS) MEASURED TO THE OUTER SURFACES OF EXTERIOR OR ENCLOSING WALLS, AND INCLUDES ALL FLOORS, MEZZANINES, HALLS, VESTIBULES, STAIRWELLS, SERVICE AND EQUIPMENT ROOMS, PENTHOUSES, VAULTS, AND ENCLOSED PASSAGES.
5. DIMENSIONS SHOWN ARE ROUNDED TO THE NEAREST INCH.



RECORD FLOOR PLAN

SCALE: 1/2" = 1'-0"

2 1 0 2 4 8
GRAPHIC SCALE

N

FIELD VERIFIED 08-28-95

NO	DATE	CLASS REV	DESCRIPTION	DWN	VER	CHKD	SUB	APP

JOHNSON CONTROLS

AS-BUILT RECORD FLOOR PLAN
CONTROL BUILDING
ARCH: RECORD FLOOR PLAN

DRAWN: P. SANCHEZ
VERIFIED: PS/[illegible]
CHECKED: C. SANDOVAL
DATE: 10-04-95

BLDG 1003 TA-54

SUBMITTED JERRY FORTE
APPROVED FOR RELEASE FRED THOMPSON

Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545

SHEET 1 OF 1

CLASSIFICATION U REVIEWER T. GUSDORF DATE 10-18-95

PROJECT ID 7556 DRAWING NO AB525 REV

JCI NO 91-011

LANL TA- Building # 54-1004

Camera 1181352

Frame #s IMG_1517 through IMG_1525

Surveyor(s) K. Towery, K. Honig, K. Garcia

Date 12/15/2014

Los Alamos National Laboratory
RMT Historic Building Survey Form

Building Name Experimental Dog Holding Facility UTMs easting 385558 northing 3967728 zone 13

Legal Description: Map Friioles Ouad 2002 tnsp 19N range 6E sec

Current Use/ Function Storage Original Use/ Function Dog Holding Facility

Date (estimated) Date (actual) 1967 Property Type Support

Type of Construction

Pre-Fabricated Metal ☑ Steel Frame ☑ Wood Frame ☐ CMU ☐ Reinforced Concrete ☐

Other Type of Construction # of Stories 1

Foundation Concrete Slab

Exterior CMU-Exterior ☐ Reinforced Concrete-Exterior ☐ Steel (galvanized) ☑ Steel (corrugated) ☐

Wood Siding ☐ Asbestos Shingles-Exterior ☐ In-Fill Panels ☐ Other-Exterior

Exterior Treatment (painted, stuccoed, etc) Galvanized metal siding

Exterior Features (docks, speakers, lights, signs, etc)

Addition CMU-Addition ☐ Reinforced Concrete-Addition ☐ Steel (galvanized)- Addition ☐ Wood ☐

Steel (corrugated)-Addition ☐ Asbestos Shingles-Addition ☐ Other- Addition

Exterior Treatment-Addition

Exterior Features-Addition

Roof Form Slanted/Shed ☑ Gable ☐ Other Roof Type

Degree of Pitch/ Slope Slight

Roof Materials Corrugated Metal ☑ Rolled Asphalt ☐ Asbestos Shingles ☐ 4-Ply Built Up ☐

Other Roof Materials

Window Type Casement ☐ Single Hung Sash ☑ Double Hung Sash ☐ Fixed Window ☐

Other Window Type Metal frame

# of Each Window Type/ Comments

Glass Type Clear ☑ Wire Glass ☐ Opaque ☑ Painted Glass ☐ Glass Block ☐

Light Pattern Two-light

Door Type Personnel Door Types Exterior Fire Door ☐ Single ☑ Double ☐ Roll-up ☐ Sliding ☐

Hollow Metal ☑ Solid Wood ☐ 1/2 Glazed ☑ Paneled ☐

Louvered ☐ Painted ☑

Interior Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐
Hollow Metal ☐ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☐

Equipment Door Types Exterior Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐
Hollow Metal ☐ Solid Wood ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☐

Interior Fire Door ☐ Single ☐ Double ☐ Roll-up ☐ Sliding ☐
Hollow Metal ☐ Solid Metal ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☐

# of Each Door Type/Comments: Single doors on east, west, and north sides

Interior Wall Gypsum Board ☐ Reinforced Concrete- Interior ☐

CMU- Interior ☐ Plywood ☐ Other- Interior

In-Wall Electrical Wiring ☐ On-Wall Electrical Wiring ☐

Ceiling Drop Ceiling ☐

Interior Comments (Equipment, etc)

Degree of Remodeling Minor

Condition Excellent ☐ Good ☐ Fair ☑ Deteriorating ☑ Contaminated ☐ Burned ☐

Associated Buildings ☑

If yes, list building names and #s TA-54-1001, -1002, -1003, and -1009

Integrity Fair

Significance None

Eligible Under Criterion A ☐ B ☐ C ☐ D ☐ Not Eligible ☑

DOE Themes

Nuclear Weapon Components and Assembly ☐

Nuclear Weapon Design and Testing ☐

Nuclear Propulsion ☐

Peaceful Uses: Plowshare, Nuclear Medicine, Nuclear Energy, Nuclear Science ☑

Energy and Environment: Research and Design Projects ☐

LANL Themes

Weapons Research and Design, Testing, and Stockpile Support ☐ Super Computing ☐

Reactor Technology ☐ Biomedical/Health Physics ☑ Strategic and Supporting Research ☐

Environment/Waste Management ☐ Administration and Social History ☐ Architectural History ☐

Recommendations/ Additional Comments

Architectural Features (elevations) TA-54-1004 is a single-story pre-engineered building measuring 80 ft by 24 ft. It is constructed of a steel frame, galvanized metal siding and a low pitched 2/12-sloped galvanized metal roof. There are three metal gravity exhausters along the ridge of the roof. Metal half-glass personnel doors are located on the east, west, and north sides of the building. Numerous metal two-light windows

are on the north and south sides.

Total sq ft 1842 Net **Architect/ Builder** Kenneth s. Clark, Architect-Engineer

Alterations There have been few modifications to the building. The outdoor "runs" constructed of chain link fencing have been removed, as well as the "doggie doors" into the inside pens. The exterior concrete curbs dividing the twenty runs are still in place. The interior configuration was later modified adapted to accommodate various dry laboratory activities.

List of Drawings (Cntrl + Enter for para break)

ENG-C 34111
Sheet 1 of 8
Experimental Dog Holding Facility
TA-51-7 (now TA-54-1004)
Civil, Architectural
September 19, 1967

ENG-C 34112
Sheet 2 of 8
Experimental Dog Holding Facility
TA-51-7 (now TA-54-1004)
Floor Plan & Section
September 19, 1967

ENG-R 2396
Sheet 1 of 1
TA-51, REF-7 (now TA-54-1004)
Floor Plan
December 18, 1968

ENG-R 3346
Sheet 1 of 1
TA-51, REF-7 (now TA-54-1004)
Dog Holding Facility
Floor Plan
December 30, 1969

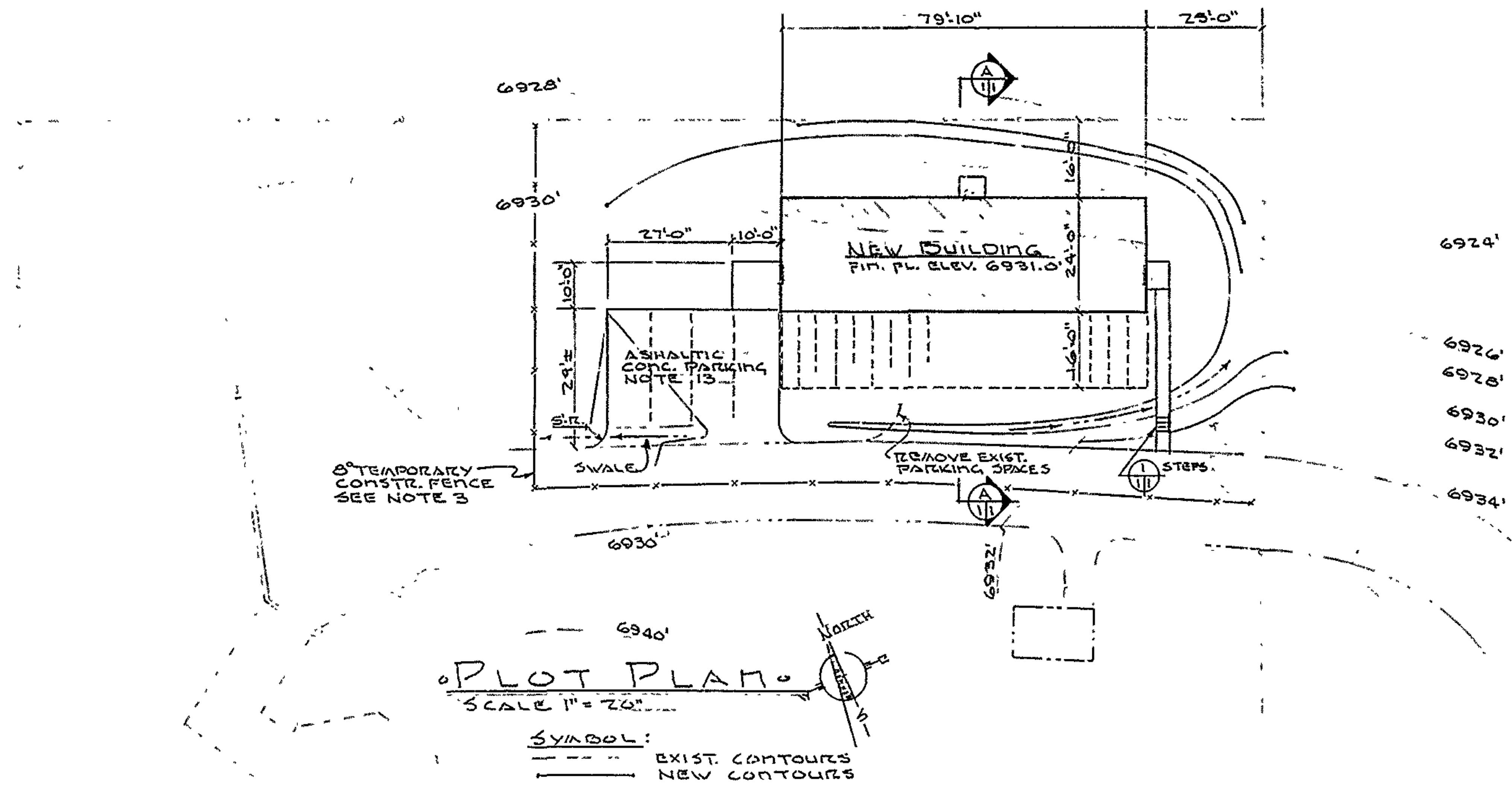
ENG-AB 369
Sheet 1 of 1
TA-54-1004
Architecture: First Floor Plan
As-Built Record floor Plan Storage Building
March 28, 1995

TA-54-1004 Northwest and southwest sides

TA-54-1004 Southwest and southeast sides

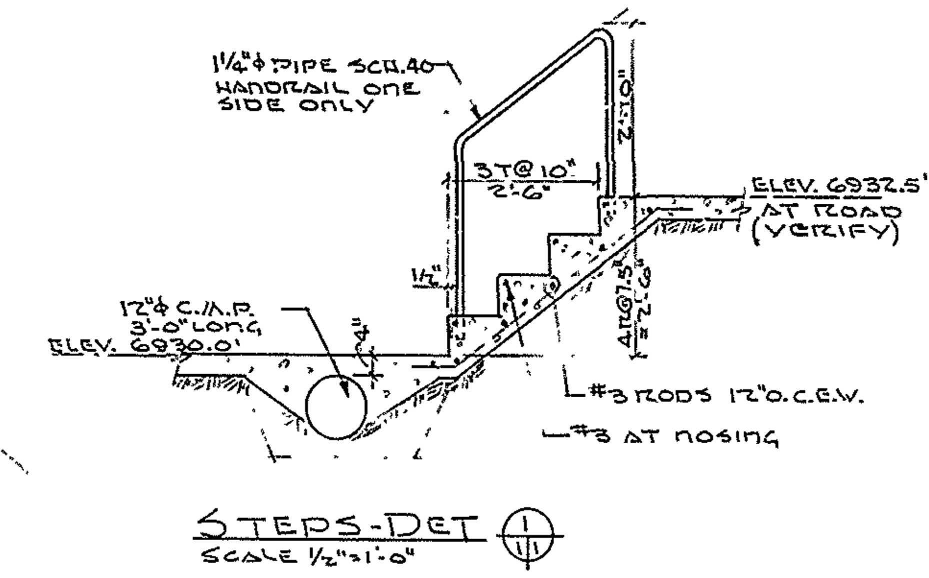
TA-54-1004 Southeast and northeast sides

TA-54-1004 Northeast and northwest sides

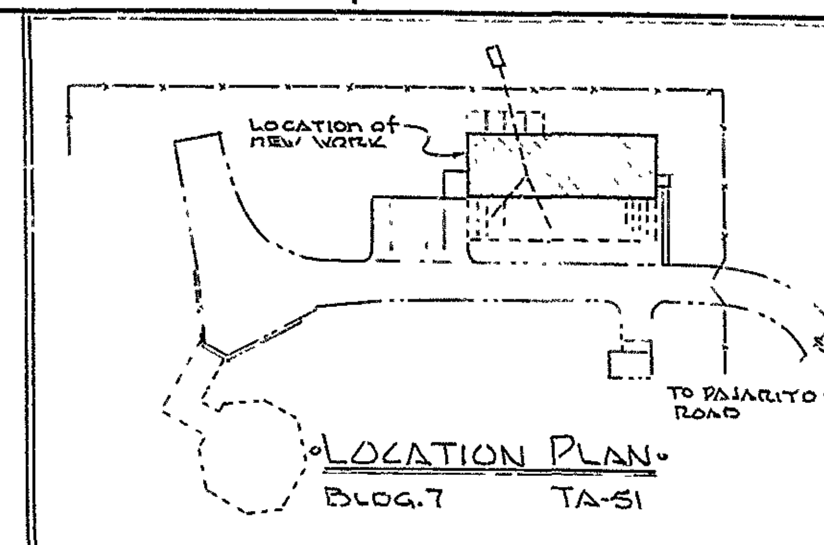


PLOT PLAN
SCALE 1" = 20'

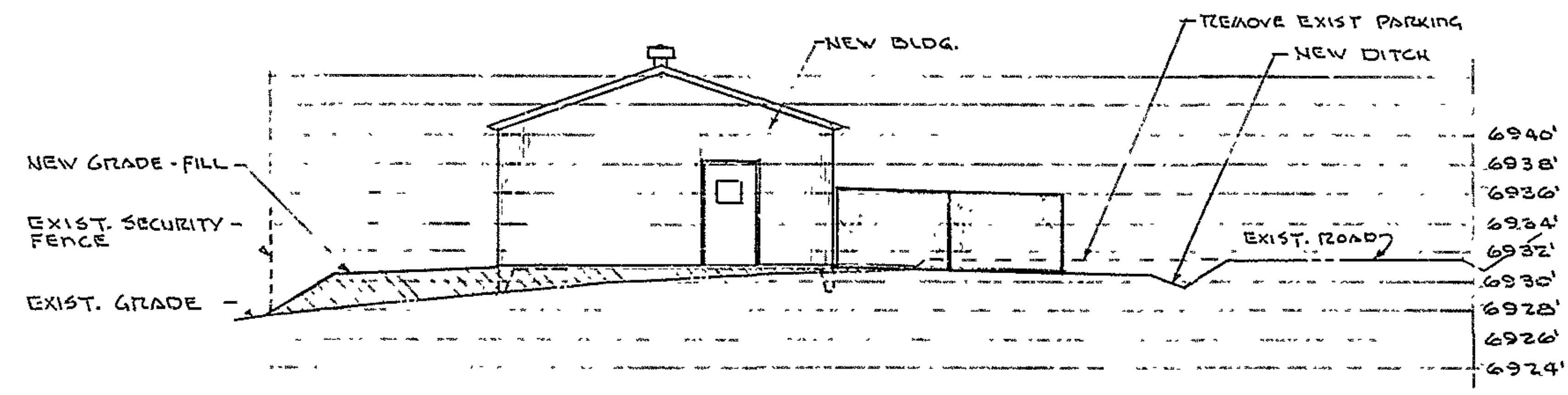
SYMBOL:
EXIST. CONTOURS
NEW CONTOURS



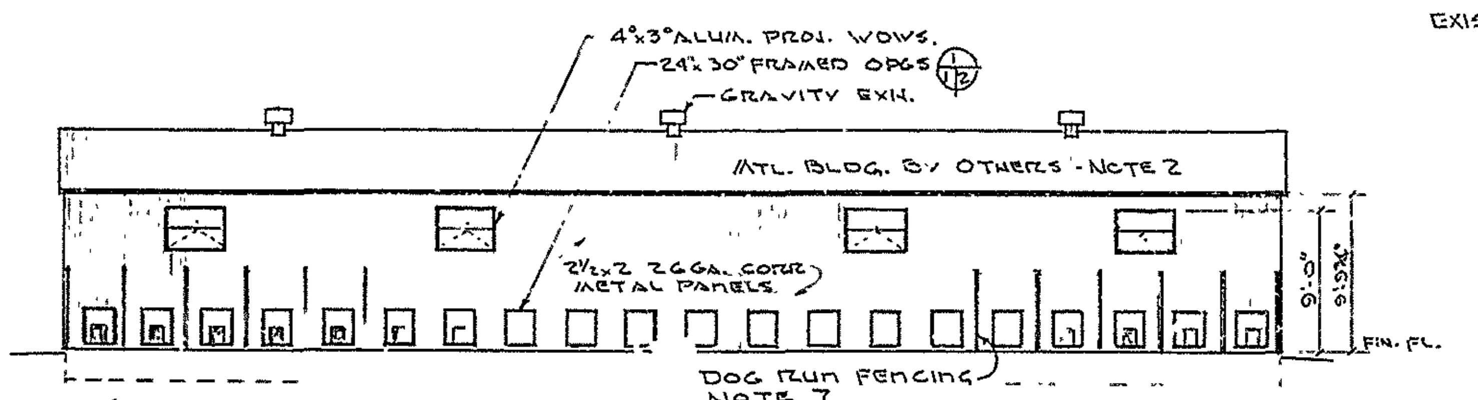
STEPS-DET
SCALE ½" = 1'-0"



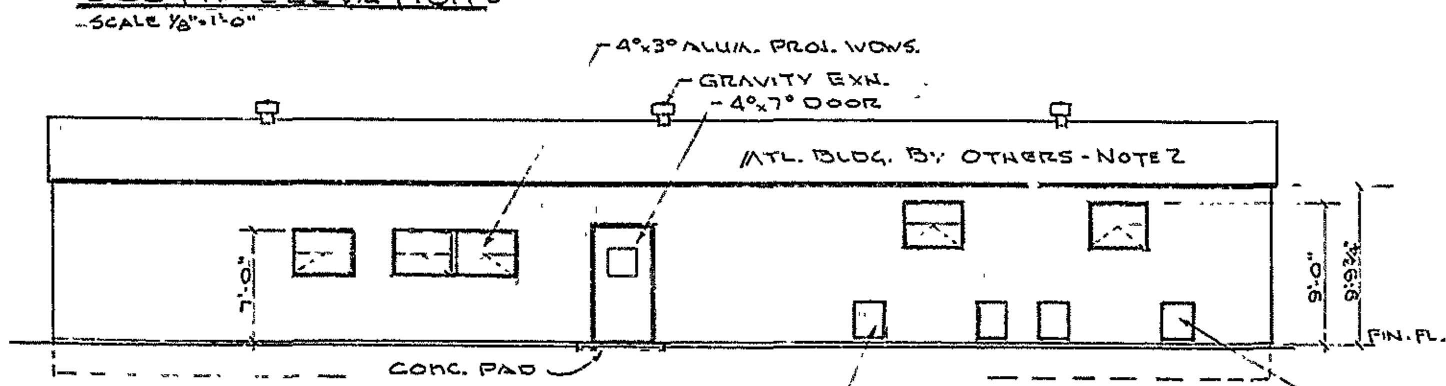
LOCATION PLAN
BLDG. 7 TA-51



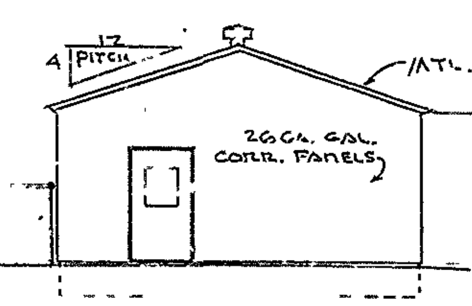
PROFILE-SECT.
SCALE ⅛" = 1'-0"



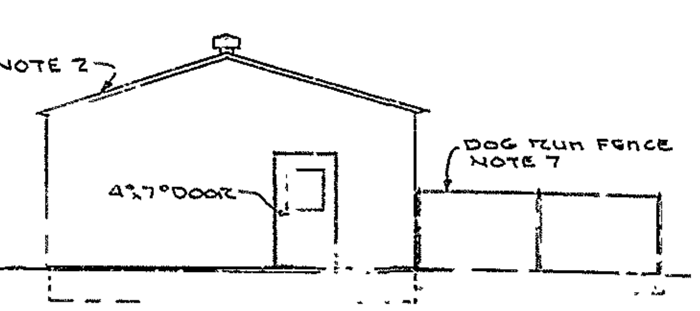
SOUTH ELEVATION
SCALE ⅛" = 1'-0"



NORTH ELEVATION
SCALE ⅛" = 1'-0"



EAST ELEVATION
SCALE ⅛" = 1'-0"



WEST ELEVATION
SCALE ⅛" = 1'-0"

CIVIL, STRUCTURAL & ARCHITECTURAL NOTES:

1. WHERE BRAND NAMES OR PROPRIETARY ITEMS ARE SPECIFIED, ITEMS OF EQUAL QUALITY FUNCTION, SIMILAR APPEARANCE & SIZE MAY BE SUBSTITUTED IN LIEU THEREOF PROVIDED SUCH SUBSTITUTION IS APPROVED BY AUTHORIZED ENG. DEPT. PERSONNEL PRIOR TO INSTALLATION.
2. PREFABRICATED MTL. BLDG. FURNISHED & INSTALLED BY OTHERS (BANES). ALL OTHER WORK, GRADING, FLOOR SLAB, INTERIOR PARTITIONS HEATING ETC., AND FENCING BY CONTRACTOR.
3. BEFORE ERRECTION OF MTL. BLDG., BY OTHERS, INSTALL STANDARD 8'-0" TEMPORARY CONSTR. FENCE AS PER. DRAWINGS.
4. ALL CONCRETE FOR THIS PROJECT IS TO TEST 3,000 P.S.I. @ 28 DAYS.
5. CONCRETE FLOOR TO HAVE "TROWEL FINISH". FLOOD FLOOR W/ HORNSTONE (3) THREE COAT APPLICATION, IN STRICT ACCORDANCE W/ MFGR'S SPECS.
6. DOG COMPARTMENTS TO BE MFGD. BY ACORN WIRE & IRON WORKS INC., 1709 W. 8TH ST., LOS ANGELES 17, CALIF. ALL WIRE TO BE 6 GA. STL. CLINCHED INTO 1½"x¾" CHANNEL FRAME, COMPLETE W/ HINGED DOORS WITH LATCH, ADJUSTABLE FLOOR SOCKETS, SIZES PER DWGS.
7. EXTERIOR DOG RUN FENCING TO BE 5'-0" HIGH STANDARD CHAIN LINK DIAMOND MESH FENCING W/ GALV. IRON POSTS & RAILS AS DETAILED & SIZED ON DWGS.
8. SINK IN WORK ROOM 106 TO BE FURNISHED BY L.A.S.L. & INSTALLED BY CONTRACTOR.
9. ~~FURNISH & INSTALL ONE SHOWER CABINET 36"x36"x82" AS MFGD. BY MILWAUKEE FERROMETAL STAMPING CO., CHICAGO 51, ILLINOIS. WALLS OF 20 GA. GALV. BONDERIZED STL. CEMENTED TO SOUND DEADENING CORE, RECEPTOR TO BE PRE-CAST TERRAZO, COMPLETE W/ CURTAIN ROD & SOAP DISH. COLOR "CORAL". VALVE & SHOWER HEAD HOLES DRILLED BY CONTRACTOR.~~
10. PAINT ALL BLOCK PARTITIONS 2 COATS #470 BLUE. WAINSCOT BLOCK WALLS EXPOSED TO DOGS WITH PITT-GLAZE # 74. TAP & TEXTURE GYPSUM CEILING AREAS & PAINT 2 COATS #500 OFF WHITE.
11. PROVIDE AND INSTALL STRUCTURE NUMBER SIGNS IN ACCORDANCE WITH L.A.S.L. STRUCT. № POLICY.
12. APPLY ROOM NUMBERS ON DOOR FRAME ABOVE EACH ROOM DOOR. USE DURO-DECAL W/ GOLD LETTERS & BLACK TRIM. PROVIDE PLAQUE WITH NUMBERS AND INSTALL ON EACH DOG COMPARTMENT.
13. PAVING TO BE AS FOLLOWS:
    a. IN ACCORDANCE WITH A.E.C. CONSTR. SPECIFICATIONS FOR TECH. AREAS.
    b. SUB-GRADE TO BE COMPACTED TO 90% MAX. DENSITY AT OPTIMUM MOISTURE CONTENT.
    c. BASE COURSE TO BE 4" COMPACTED, STABILIZED AGGREGATE.
    d. PRIME COAT - MC-1 CUT-BACK ASPHALT APPLIED AT THE RATE OF 0.25 TO 0.35 GAL. PER SQ. YD.
    e. HOT MIX - 2 INCH COMPACTED HOT MIX ASPHALTIC CONC.

DOOR SCHEDULE:

(A) 2 - 3'-6"x7'-0"x1¾" H.M. DOOR WITH 2" H.M. FRAME FOR 4" BLK. WALL

(B) 1 - 3'-0"x7'-0"x1¾" H.M. DOOR WITH 2" H.M. FRAME FOR 4" BLK. WALL

HARDWARE: (RUSSWIN)

DOOR "A"
1 LOCKSET A2025 BKS FLANDERS
1½ PRS BUTTS 85¼, 4½x4½ BRONZE
1 DOOR STOP #209

DOOR "B"
1 LOCKSET #1039 BKS FLANDERS
1½ PRS BUTTS 85¼, 4½x4½ BRONZE
1 DOOR STOP #209

NOTE:
INSTALL "BEST" CORE IN ALL (3) EXTERIOR DOORS FURN. BY OTHERS (BANES)

THIS JOB MUST BE INSPECTED AND ANY CHANGES APPROVED BY ENG-4
WILDE PHONE 7-6181

NO.	DATE	REVISIONS	BY	CHKD	GRP.	D.O.	GRP. LDR.	ENG. D.O.

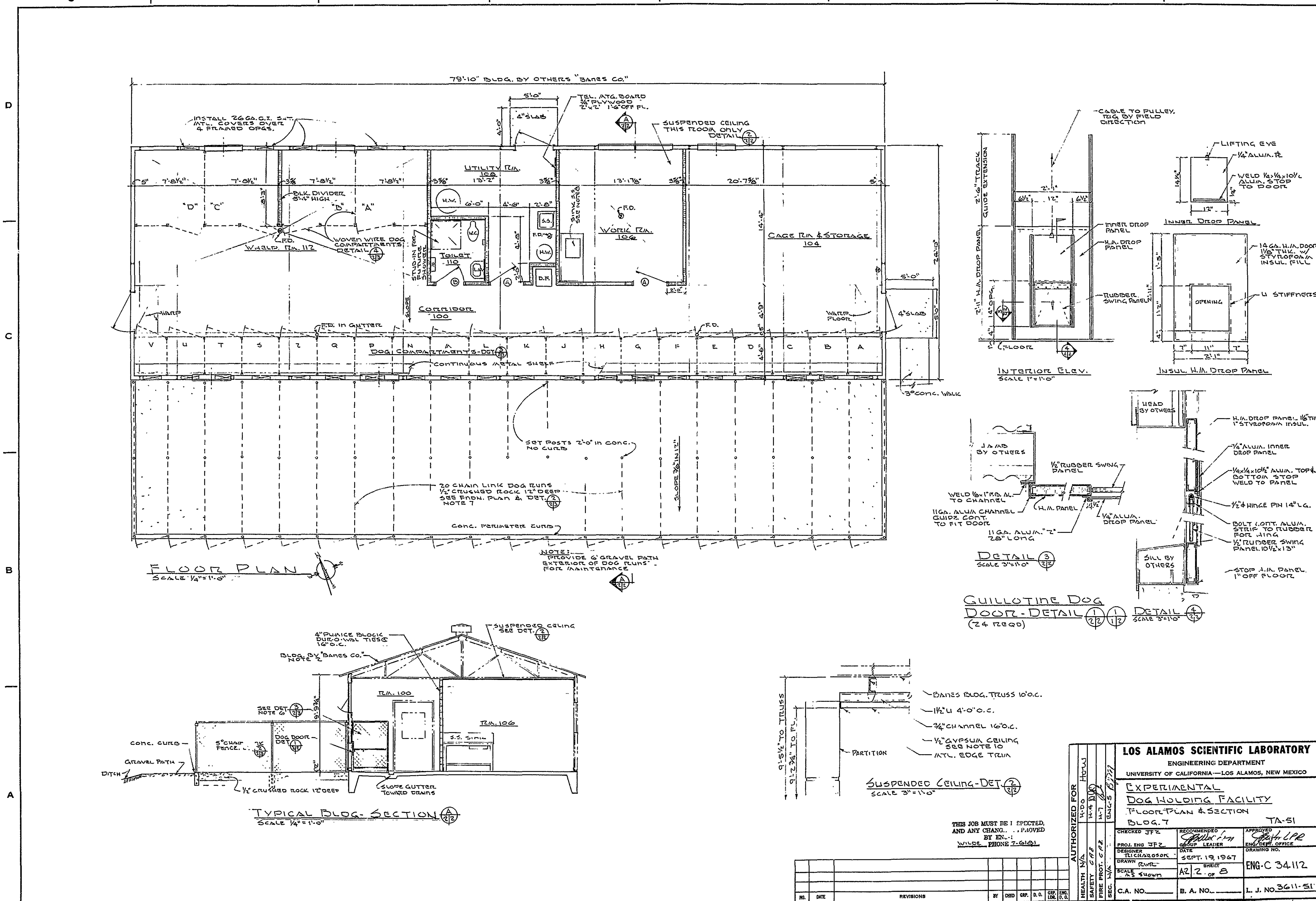
AUTHORIZED FOR: H-DO How; H-4; H-7; ENG-5
HEALTH N/A; SAFETY; FIRE PROT.; SEC. N/A

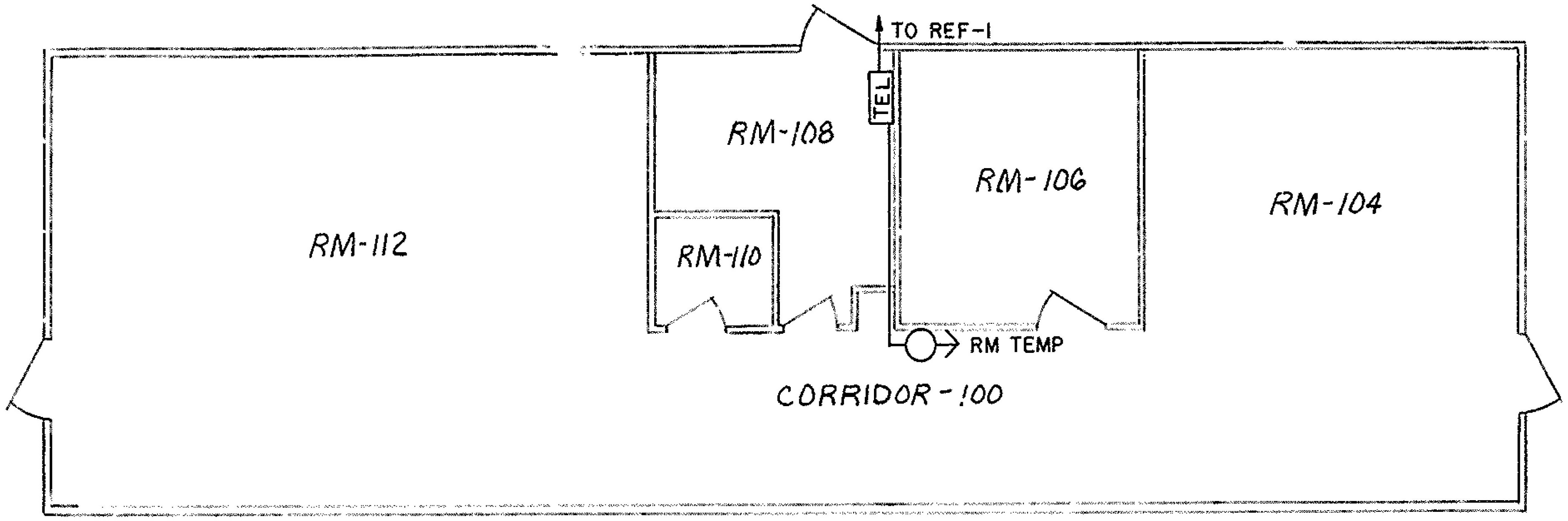
LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT
UNIVERSITY OF CALIFORNIA—LOS ALAMOS, NEW MEXICO

EXPERIMENTAL
DOG HOLDING FACILITY
CIVIL, ARCHITECTURAL
BLDG. 7 TA-51

CHECKED JFZ PROJ. ENG. JFZ	RECOMMENDED GROUP LEADER	APPROVED ENG. DEPT. OFFICE
DESIGNER RICHARDSON DRAWN RWR SCALE AS SHOWN	DATE SEPT. 19, 1967 A-1 SHEET 1 OF 8	DRAWING NO. ENG-C 34111
C.A. NO.	B. A. NO.	L. J. NO. 3611-51

RECD / LOGGED / VAULT


79'-10" BLDG. BY OTHERS "BANES CO."
INSTALL 26 GA. G.I. SHT. MTL. COVERS OVER 4 FRAMED OPGS.
TEL. MTG. BOARD 3/4" PLYWOOD 2'x2' 1'-6" OFF FL.
SUSPENDED CEILING THIS ROOM ONLY DETAIL
UTILITY RM. 108
WORK RM. 106
CAGE RM & STORAGE 104
WHELP. RM. 112
TOILET 110
CORRIDOR 100
BLK DIVIDER 5'-4" HIGH
WOVEN WIRE DOG COMPARTMENTS DETAIL
STUD-IN FOR FUTURE SHOWER
F.D. IN GUTTER
DOG COMPARTMENTS-DET.
CONTINUOUS METAL SHELF
WARP FLOOR
3" CONC. WALK
SET POSTS 2'-0" IN CONC. NO CURB
20 CHAIN LINK DOG RUNS 1/2" CRUSHED ROCK 12" DEEP SEE FNDN. PLAN & DET. NOTE 7
CONC. PERIMETER CURB
NOTE: PROVIDE 6' GRAVEL PATH EXTERIOR OF DOG RUNS FOR MAINTENANCE
FLOOR PLAN
SCALE 1/4"=1'-0"
CABLE TO PULLEY, RIG BY FIELD DIRECTION
2'-6" TRACK GUIDE EXTENSION
INNER DROP PANEL
H.M. DROP PANEL
RUBBER SWING PANEL
INTERIOR ELEV.
SCALE 1"=1'-0"
LIFTING EYE
1/4" ALUM. PL.
WELD 1/4x1/4x10 1/2 ALUM. STOP TO DOOR
INNER DROP PANEL
14 GA. H.M. DOOR 1 1/8" THK. w/ STYROFOAM INSUL. FILL
U STIFFENERS
OPENING
INSUL. H.M. DROP PANEL
JAMB BY OTHERS
1/2" RUBBER SWING PANEL
WELD 1/8x1" FB. AL. TO CHANNEL
11 GA. ALUM CHANNEL GUIDE CONT. TO FIT DOOR
11 GA. ALUM. "Z" 28" LONG
1/4" ALUM. DROP PANEL
DETAIL 3
SCALE 3"=1'-0"
HEAD BY OTHERS
H.M. DROP PANEL 1 1/8" THK 1" STYROFOAM INSUL.
1/4" ALUM. INNER DROP PANEL
1/4x1/4x10 1/2" ALUM. TOP & BOTTOM STOP WELD TO PANEL
1/2" φ HINGE PIN 14" LG.
BOLT CONT. ALUM. STRIP TO RUBBER FOR HING
1/2" RUBBER SWING PANEL 10 1/2x13"
SILL BY OTHERS
STOP H.M. PANEL 1" OFF FLOOR
GUILLOTINE DOG DOOR-DETAIL
(24 REQD)
DETAIL 4
SCALE 3"=1'-0"
4" PUMICE BLOCK DUR-O-WAL TIES @ 16" O.C.
SUSPENDED CEILING SEE DET. 2
BLDG. BY "BANES CO." NOTE 2
SEE DET. 3 NOTE 6
DOG DOOR DET. 1
5' CHAIN FENCE
CONC. CURB
GRAVEL PATH
DITCH
1/2" CRUSHED ROCK 12" DEEP
SLOPE GUTTER TOWARD DRAINS
RM. 100
RM. 106
S.S. SINK
TYPICAL BLDG. SECTION
SCALE 1/4"=1'-0"
BANES BLDG. TRUSS 10' O.C.
1 1/2" U 4'-0" O.C.
3/4" CHANNEL 16" O.C.
1/2" GYPSUM CEILING SEE NOTE 10
MTL. EDGE TRIM
PARTITION
SUSPENDED CEILING-DET. 2
SCALE 3"=1'-0"
THIS JOB MUST BE INSPECTED, AND ANY CHANGES APPROVED BY ENG. WILDE PHONE 7-6161
LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT
UNIVERSITY OF CALIFORNIA—LOS ALAMOS, NEW MEXICO
EXPERIMENTAL DOG HOLDING FACILITY
FLOOR PLAN & SECTION
BLDG. 7
TA-51
DESIGNER RICHARDSON
DATE SEPT. 19, 1967
DRAWN RWR
SCALE AS SHOWN
A2 2 OF 8
ENG-C 34112
L. J. NO. 3611-51
NO. DATE REVISIONS BY CHKD GRP. D.O. GRP. LDR. ENG. D.O.
AUTHORIZED FOR HEALTH SAFETY FIRE PROT. SEC.

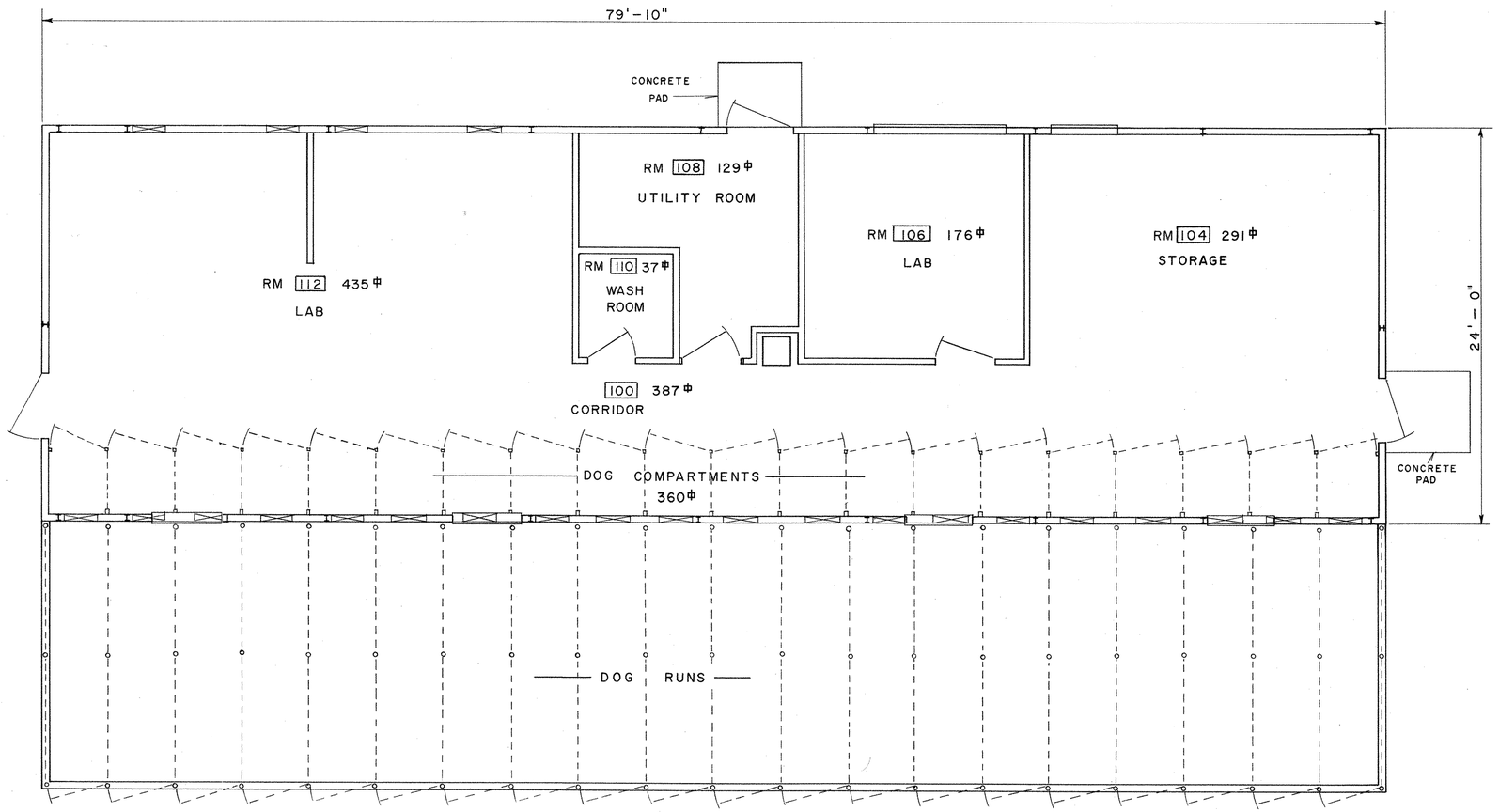


los alamos scientific laboratory
engineering department
UNIVERSITY OF CALIFORNIA — LOS ALAMOS, NEW MEXICO

EQUIP SURVEILLANCE SYS (ESS)
FLOOR PLAN
REF-7 TA-51

AUTHORIZED FOR	SUBMITTED PROJECT ENGR. DP	APPROVED ENGR. GROUP LEADER	APPROVED ENGR. DEPT. OFFICE
LASL SEC.	CHECKED BY R. A. Willint	B. A. NO.	DATE 12-18-68
AEC SEC.	DESIGNED BY R. A. Willint	C. A. NO.	SHEET 1 OF 1
SAFETY	DRAWN BY VASQUEZ	L. J. NO.	DRAWING NO. ENG— R 2396
HEALTH			

THIS JOB MUST BE INSPECTED AND ANY CHANGES APPROVED BY ENG-4 PHONE



FLOOR PLAN

1/4" = 1'-0" 0 1' 2' 3' 4' 5' 6' 7' 8' 9' 10'

GRAPHIC SCALE

BLDG TOTAL SQ FT. 1815

REV.	DATE	REVISION	BY	CKD.	APP.
2	2-22-84	REVISED TO STATUS OF 2-22-84	H&N		

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

DOG HOLDING FACILITY
FLOOR PLAN

SEC. CLASSIFICATION
CLASS. U
REVIEWER Broadrick
DATE 3-30-84

BLDG. REF-7 TA-51

SUBMITTED	RECOMMENDED	APPROVED
E. Trujillo	Dennis Rigg	R.H. Rochow

DRAWN	CHECKED	DATE	SHEET NO.	DRAWING NO.
D.A. DAVIS	H&N	12-30-69	1 OF 1	ENG-R 3346

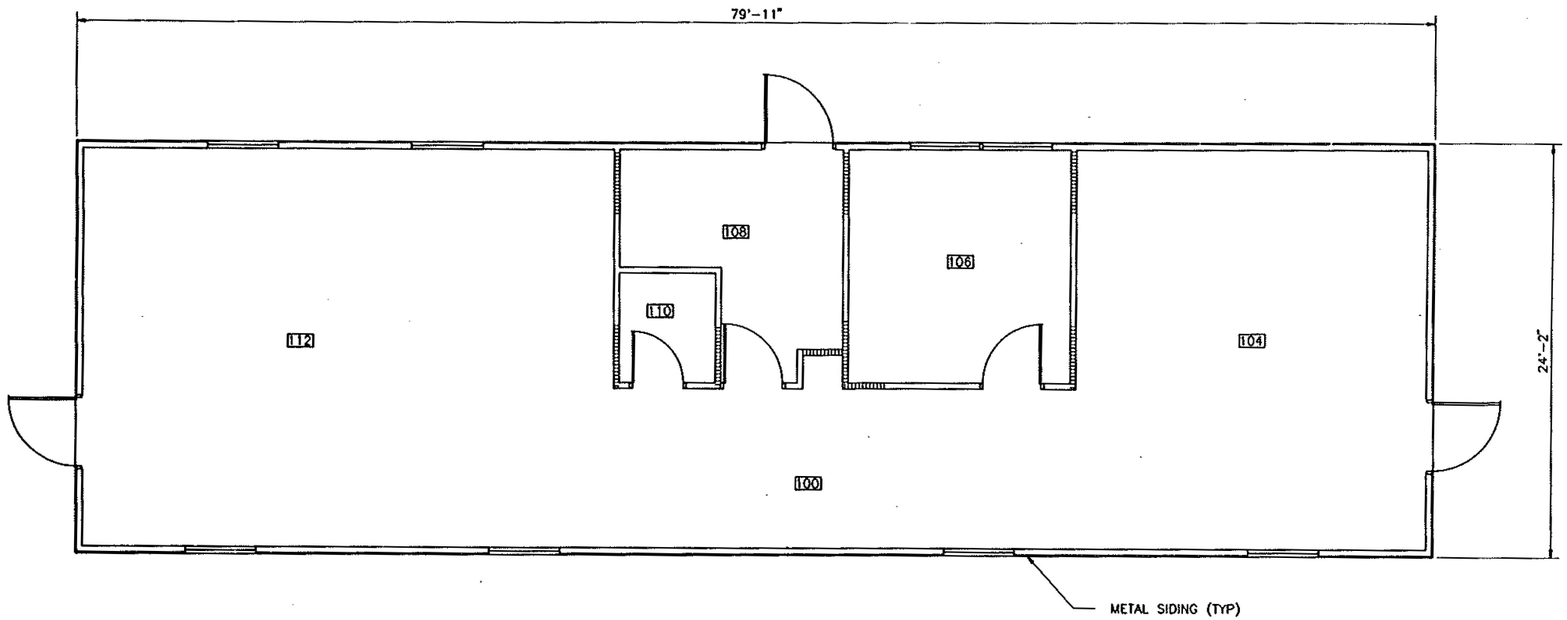
ROOM INFORMATION CHART					
RM NO	NET SQ FOOTAGE	RM NO	NET SQ FOOTAGE	RM NO	NET SQ FOOTAGE
100	261	104	484	106	185
108	140	110	41	112	731

TOTAL ROOM NET SQUARE FOOTAGE (BUILDING) = 1,842

GROSS SQUARE FOOTAGE (BUILDING) = 1,928

LEGEND

CONCRETE BLOCK
WINDOW
WOOD OR METAL STUD



NOTES

1. ALL EXTERIOR WALLS ARE 5" THICK UNLESS OTHERWISE NOTED.
2. ALL INTERIOR WALLS ARE 4" THICK UNLESS OTHERWISE NOTED.
3. REFERENCE DRAWING ENG-R3346.
4. ROOM NET SQUARE FOOTAGE IS COMPUTED BY MEASURING FROM THE INSIDE FACE OF EXTERIOR WALLS TO THE CENTERLINE OF ALL OTHER WALLS. AREAS SHOWN ARE ROUNDED TO THE NEAREST SQUARE FOOT.
5. GROSS SQUARE FOOTAGE IS EQUAL TO ALL FLOOR AREA (INCLUDING ALL OPENINGS IN FLOOR SLABS) MEASURED TO THE OUTER SURFACES OF EXTERIOR OR ENCLOSING WALLS, AND INCLUDES ALL FLOORS, MEZZANINES, HALLS, VESTIBULES, STAIRWELLS, SERVICE AND EQUIPMENT ROOMS, PENTHOUSES, VAULTS, AND ENCLOSED PASSAGES.
6. DIMENSIONS SHOWN ARE ROUNDED TO THE NEAREST INCH.

FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

4 3 2 1 0 4 8 16
GRAPHIC SCALE

N

FIELD VERIFIED 11-28-94

MF	NO	DATE	CLASS REV	DESCRIPTION	DWN	VER	CHKD	REL	SUB	REC	APP

JOHNSON CONTROLS WORLD SERVICES INC.

AS-BUILT RECORD FLOOR PLAN
STORAGE BUILDING
ARCH: FIRST FLOOR PLAN

DRAWN P. SANCHEZ
VERIFIED FS/DWT
CHECKED S. GALLEGOS
RELEASED C. SANDOVAL
DATE 03-28-95

BLDG 1004 TA-54

SUBMITTED JERRY FORTE
RECOMMENDED FRED THOMPSON 5/5/95
APPROVED FRED THOMPSON 5/5/95

Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545

SHEET 1 OF 1

CLASSIFICATION U REVIEWER T. GUSDORF DATE 5-4-95

PROJECT ID 7556
DRAWING NO AB369
REV

JCI NO 91-011

LANL TA- Building # 54-1009

Camera 1181352

Frame #s IMG_1526 through IMG_1535

Surveyor(s) K. Towery, K. Honig, K. Garcia

Date 12/16/2014

Los Alamos National Laboratory
RMT Historic Building Survey Form

Building Name Animal Holding Facility UTMs easting 385670 northing 3967570 zone 13

Legal Description: Map Friioles Ouad 2002 tnsp 19N range 6E sec

Current Use/ Function Vacant Original Use/ Function Animal Holding Facility

Date (estimated) Date (actual) 1974 Property Type Support

Type of Construction

Pre-Fabricated Metal ☑ Steel Frame ☑ Wood Frame ☐ CMU ☐ Reinforced Concrete ☐

Other Type of Construction # of Stories 1

Foundation Concrete Slab

Exterior CMU-Exterior ☐ Reinforced Concrete-Exterior ☐ Steel (galvanized) ☑ Steel (corrugated) ☐

Wood Siding ☐ Asbestos Shingles-Exterior ☐ In-Fill Panels ☐ Other-Exterior

Exterior Treatment (painted, stuccoed, etc) Galvanized metal siding

Exterior Features (docks, speakers, lights, signs, etc) Four metal gravity exhausters and utility vents and pipes, lights, and conduit

Addition CMU-Addition ☐ Reinforced Concrete-Addition ☐ Steel (galvanized)- Addition ☑ Wood ☐

Steel (corrugated)-Addition ☐ Asbestos Shingles-Addition ☐ Other- Addition

Exterior Treatment-Addition

Exterior Features-Addition

Roof Form Slanted/Shed ☑ Gable ☐ Other Roof Type

Degree of Pitch/ Slope Slight

Roof Materials Corrugated Metal ☑ Rolled Asphalt ☐ Asbestos Shingles ☐ 4-Ply Built Up ☐

Other Roof Materials

Window Type Casement ☐ Single Hung Sash ☑ Double Hung Sash ☐ Fixed Window ☐

Other Window Type Metal frame

# of Each Window Type/ Comments

Glass Type Clear ☑ Wire Glass ☐ Opaque ☑ Painted Glass ☐ Glass Block ☐

Light Pattern Two-light

Door Type Personnel Door Types Exterior Fire Door ☐ Single ☑ Double ☑ Roll-up ☐ Sliding ☐

Hollow Metal ☑ Solid Wood ☐ 1/2 Glazed ☑ Paneled ☐
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Hollow Metal ☐ Solid Metal ☐ 1/2 Glazed ☐ Paneled ☐
Louvered ☐ Painted ☐

# of Each Door Type/Comments: 3 single, 1 pair half-glazed, 1 pair-louvered

Interior Wall Gypsum Board ☐ Reinforced Concrete- Interior ☐

CMU- Interior ☑ Plywood ☐ Other- Interior

In-Wall Electrical Wiring ☐ On-Wall Electrical Wiring ☐

Ceiling Drop Ceiling ☐

Interior Comments (Equipment, etc)

Degree of Remodeling Moderate

Condition Excellent ☐ Good ☐ Fair ☐ Deteriorating ☑ Contaminated ☑ Burned ☐

Associated Buildings ☑

If yes, list building names and #s TA-54-1001, -1002, -1003, and -1004

Integrity Poor

Significance None

Eligible Under Criterion A ☐ B ☐ C ☐ D ☐ Not Eligible ☑

DOE Themes

Nuclear Weapon Components and Assembly ☐
Nuclear Weapon Design and Testing ☐
Nuclear Propulsion ☐
Peaceful Uses: Plowshare, Nuclear Medicine, Nuclear Energy, Nuclear Science ☑
Energy and Environment: Research and Design Projects ☐

LANL Themes

Weapons Research and Design, Testing, and Stockpile Support ☐ Super Computing ☐
Reactor Technology ☐ Biomedical/Health Physics ☑ Strategic and Supporting Research ☐
Environment/Waste Management ☐ Administration and Social History ☐ Architectural History ☐

Recommendations/ Additional Comments

Architectural Features (elevations) TA-54-1009 is a single-story metal-framed pre-engineered building measuring 32 ft by 80 ft with galvanized ribbed panel siding and roof panels. It has a low pitched roof at a 2/12-slope. There are four metal gravity exhausters on the

roof as well as other utility vents and pipes. The original interior walls were constructed of concrete block (CMU) which separated five animal pens. Outdoor runs were also created with chain link fencing. A unique feature was an 8 ft tall by 9 ft diameter metal granary for food storage that has been previously removed. Metal personnel doors are located on all sides of the building and metal windows are on the east and north sides of the building. Originally, a one-ton monorail system was incorporated in the building.

Total sq ft | **Architect/ Builder** Kenneth S. Clark, Architect-Engineer

Alterations In 1979, a lean-to shed was added to the west side of the building, the chain link fencing was removed, and the HVAC system was upgraded. In 1990, a major remodel was accomplished incorporating a new framed ceiling, significant plumbing, and HVAC upgrades to create wet laboratory space. In 1993, a new liquid sanitary drain system, another lean-to type addition, and vestibule were also added. The interior was been modified to accommodate more recent laboratory activities.

List of Drawings (Cntrl + Enter for para break)

ENG-C 42677
Sheet 4 of 12
Animal Holding Facility, TA-51
TA-51-15 (now TA-54-1009)
Architectural: Floor Plan
April 5, 1973

ENG-C 42677
Sheet 5 of 12
Animal Holding Facility, TA-51
TA-51-15 (now TA-54-1009)
Architectural: Elevations
April 5, 1973

ENG-C 42677
Sheet 6 of 12
Animal Holding Facility, TA-51
TA-51-15 (now TA-54-1009)
Architectural: Sections
April 5, 1973

ENG-C 43557
Sheet 2 of 5
TA-51, REF-15 (now TA-54-1009)
Building Addition
Structural: Plan, Elevations, Details, & Section
April 6, 1979

ENG-R 3372
Sheet 1 of 1
Animal Holding Facility
TA-51, REF-15 (now TA-54-1009)
Floor Plan
September 27, 1983

ENG-AB 500
Chemistry Lab
TA-54-1009
Architectural: Record Floor Plan
As-Built Record Floor Plan
August 17, 1995

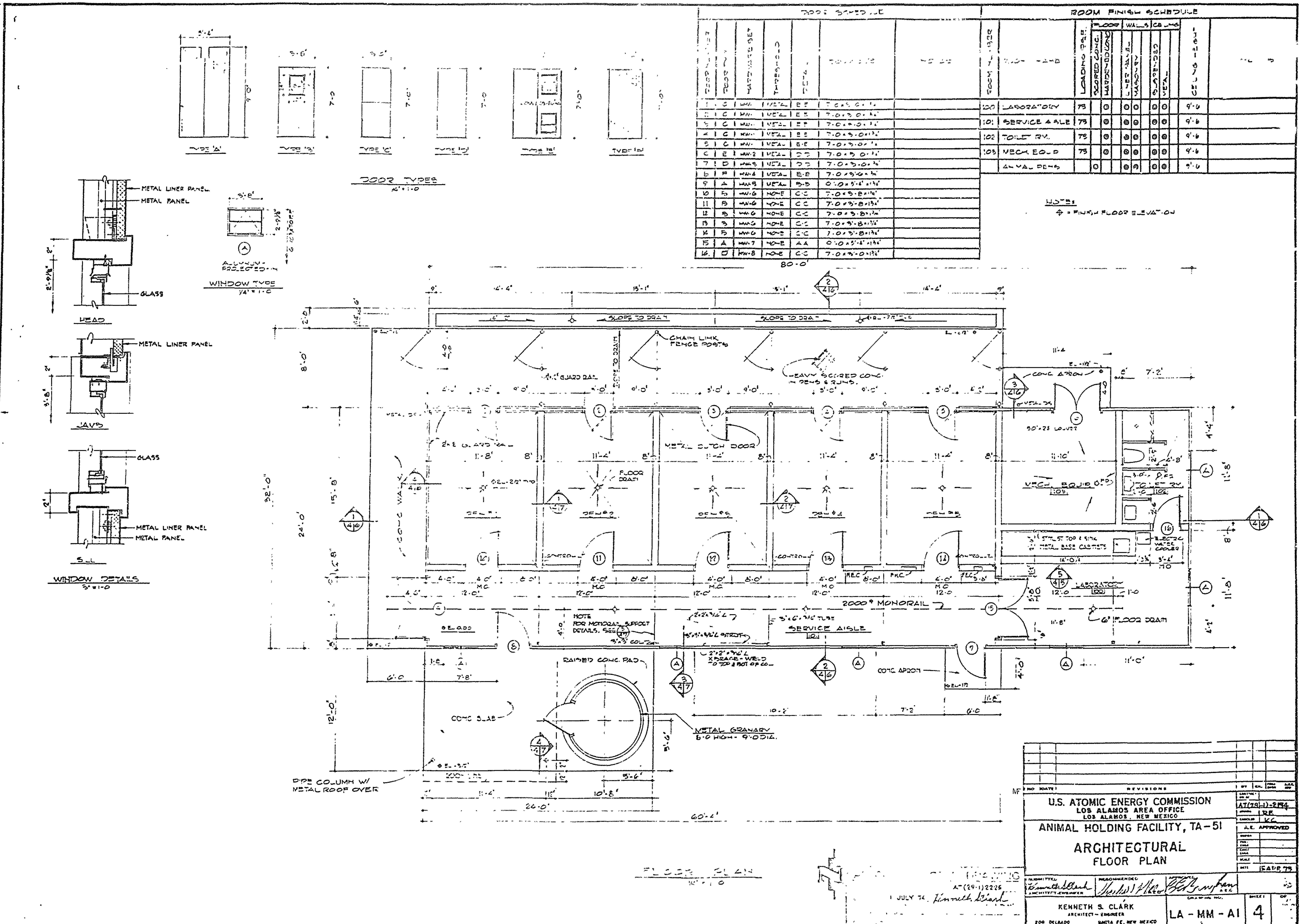
TA-54-1009 South side

TA-54-1009 West and south sides

TA-54-1009 North and west sides

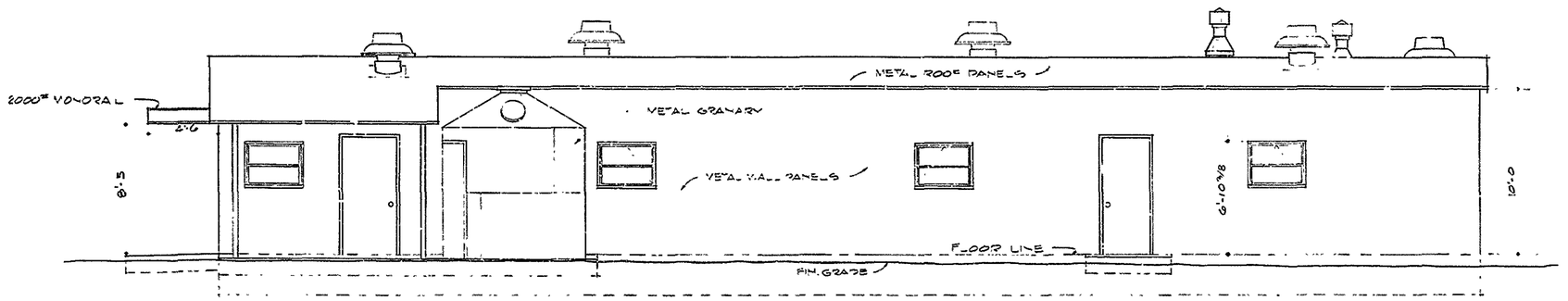
TA-54-1009 East side

TA-54-1009 South and east sides

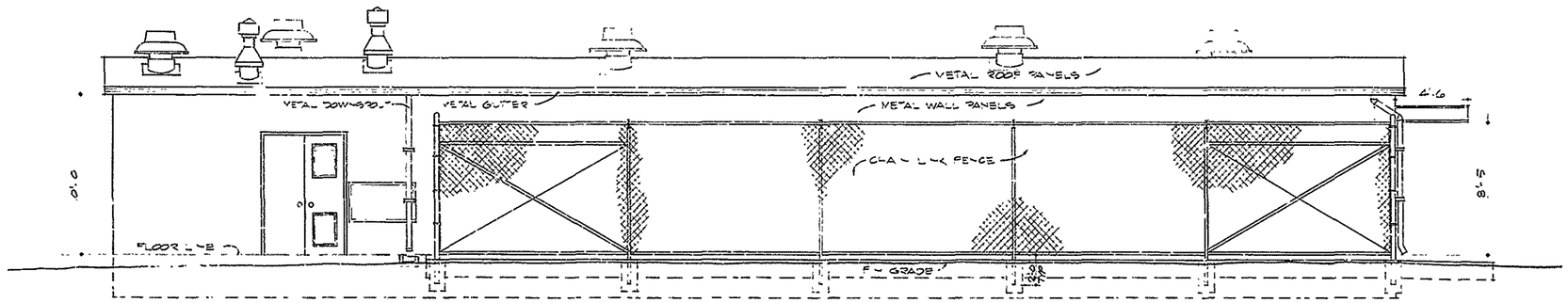


LAB JOB 4768-51 ENG C-42677

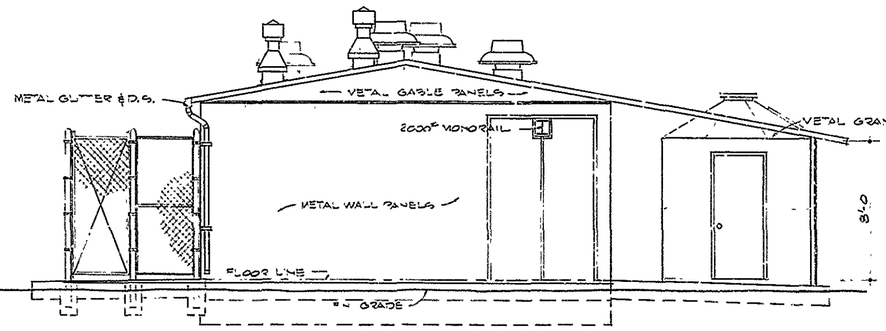
+amtec



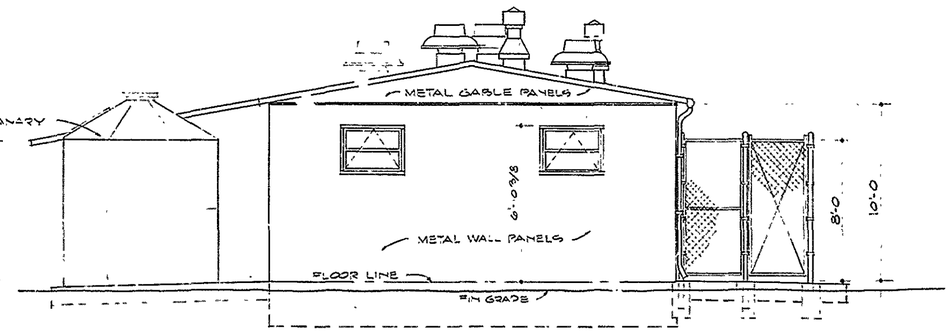
EAST ELEVATION
1/4" = 1'-0



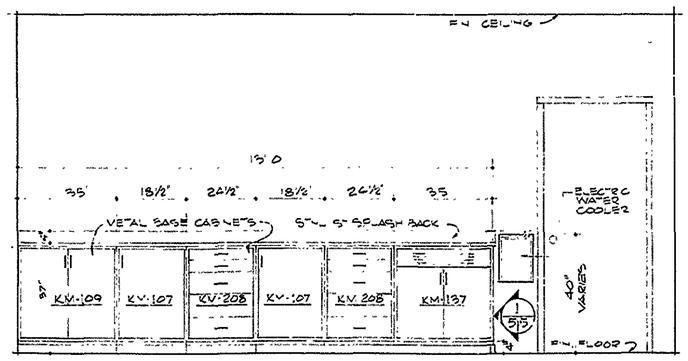
WEST ELEVATION
1/4" = 1'-0



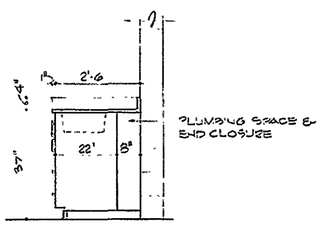
SOUTH ELEVATION
1/4" = 1'-0



NORTH ELEVATION
1/4" = 1'-0



ELEVATION 5/4/5
1/2" = 1'-0



END ELEVATION 1/5/5
1/2" = 1'-0

AT(29-1)2226
1 JULY 74 Kenneth S Clark

NO	DATE	REVISIONS	BY	CK.	PROJ ENGR	ARCH APP

U.S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

CONTRACT NO. EX: AT(29-1)-2199
DRAWN: RB
CHECKED: KC
A C APPROVED
DESIGN
PROJ ENGR
CHIEF ENGR
SCALE
DATE: 5APR73

ANIMAL HOLDING FACILITY, TA-51

ARCHITECTURAL ELEVATIONS

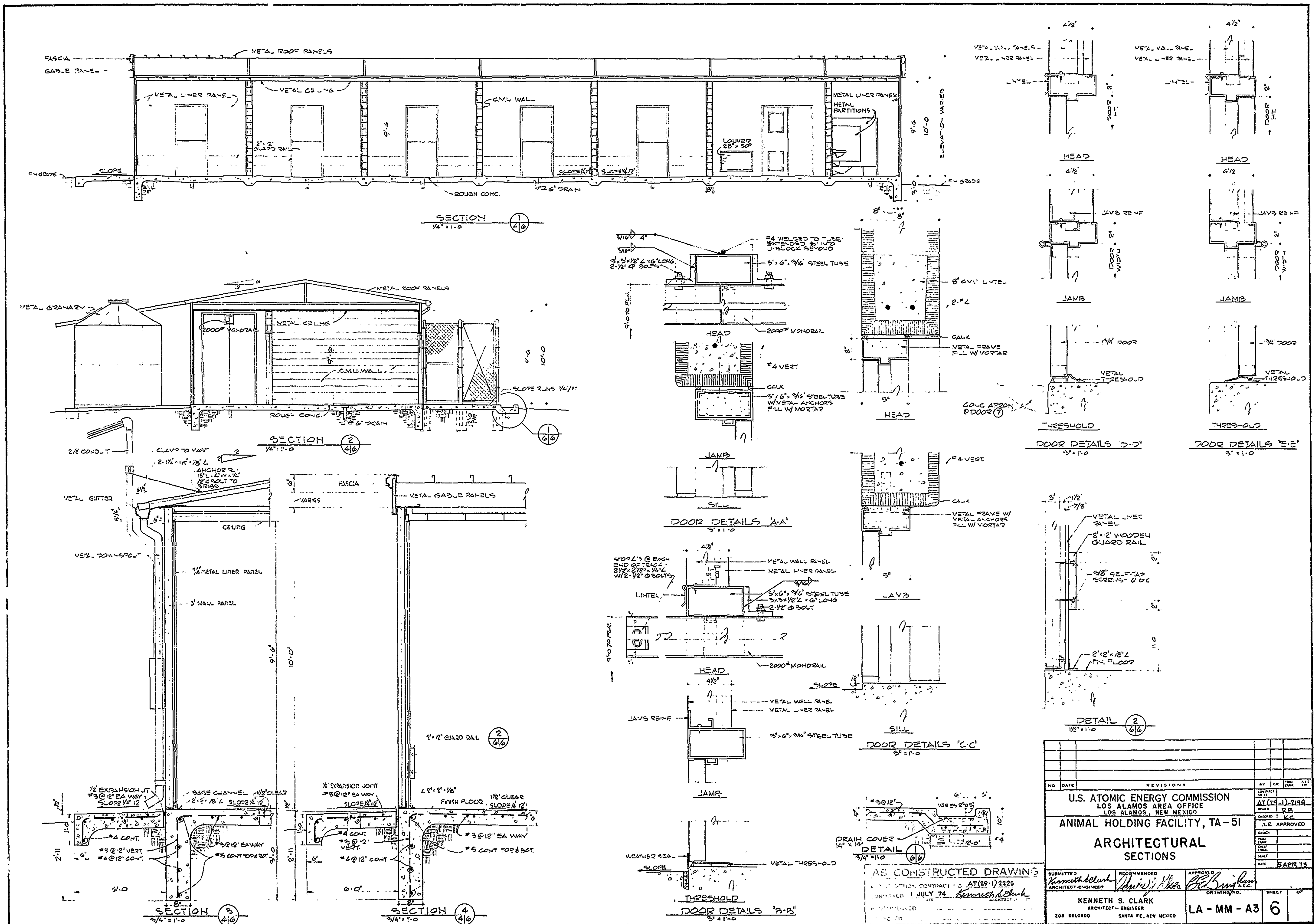
SUBMITTED: Kenneth S Clark, ARCHITECT-ENGINEER
RECOMMENDED: [illegible], A.E.C.
APPROVED: [illegible], A.E.C.

KENNETH S CLARK
ARCHITECT – ENGINEER
209 DELGADO SANTA FE, NEW MEXICO

DRAWING NO. LA - MM - A2
SHEET 5 OF

RECD. ___ LOGGED ___ TO VAULT

LAB JOB 4768-51 ENG C-42677



AS CONSTRUCTED DRAWING

CONSTRUCTION CONTRACT NO. AT(29-1)2225

SUBMITTED 1 JULY 74

U.S. ATOMIC ENERGY COMMISSION
LOS ALAMOS AREA OFFICE
LOS ALAMOS, NEW MEXICO

ANIMAL HOLDING FACILITY, TA-51

ARCHITECTURAL SECTIONS

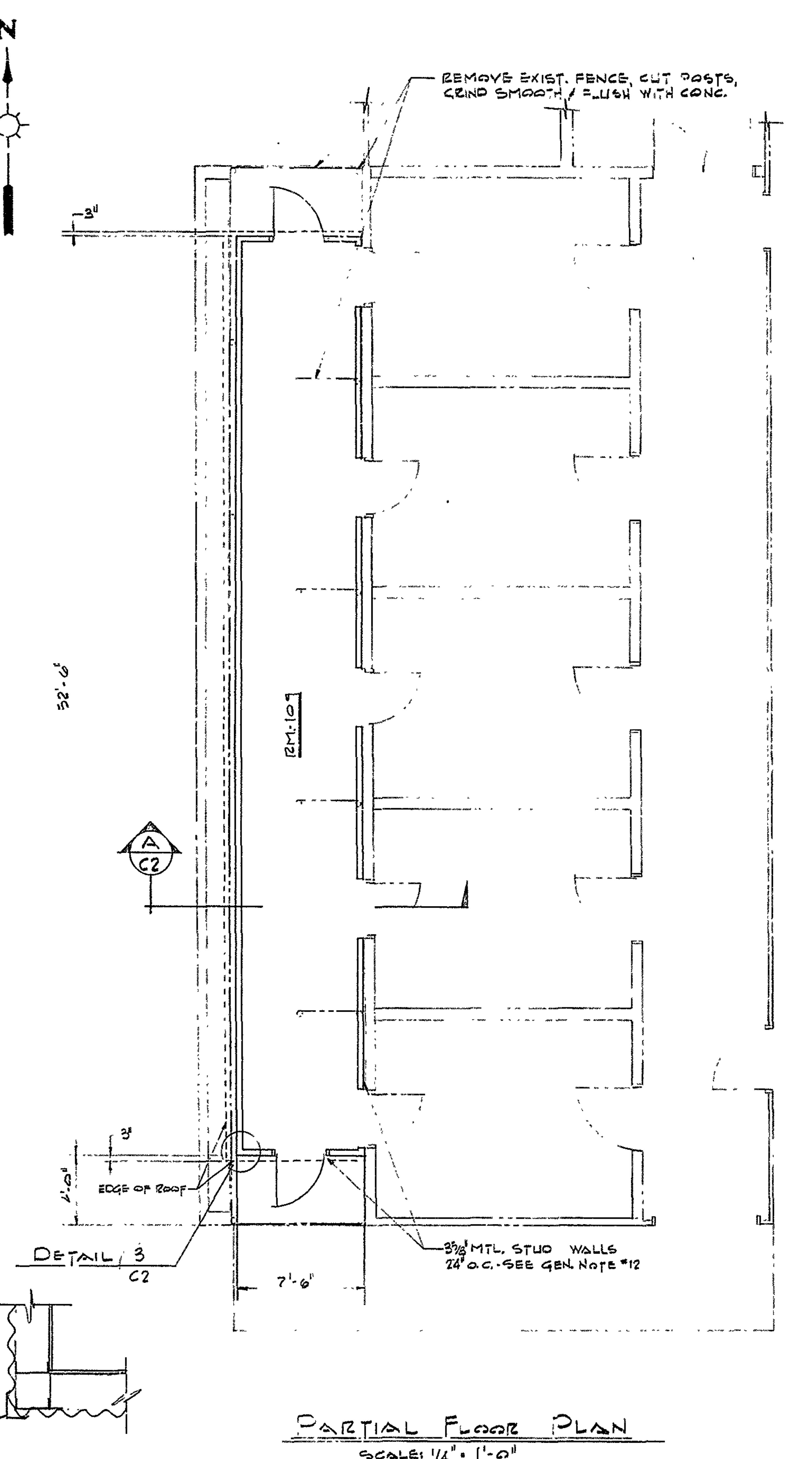
CONTRACT NO. AT(29-1)-2194
DRAWN RB
CHECKED KC
A.E. APPROVED
DATE 5 APR 73

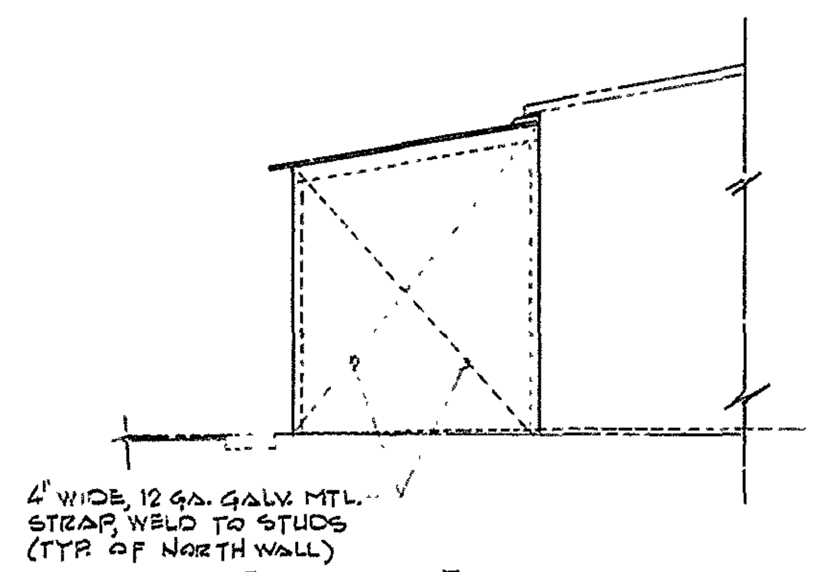
KENNETH S. CLARK
ARCHITECT - ENGINEER
208 DELGADO SANTA FE, NEW MEXICO

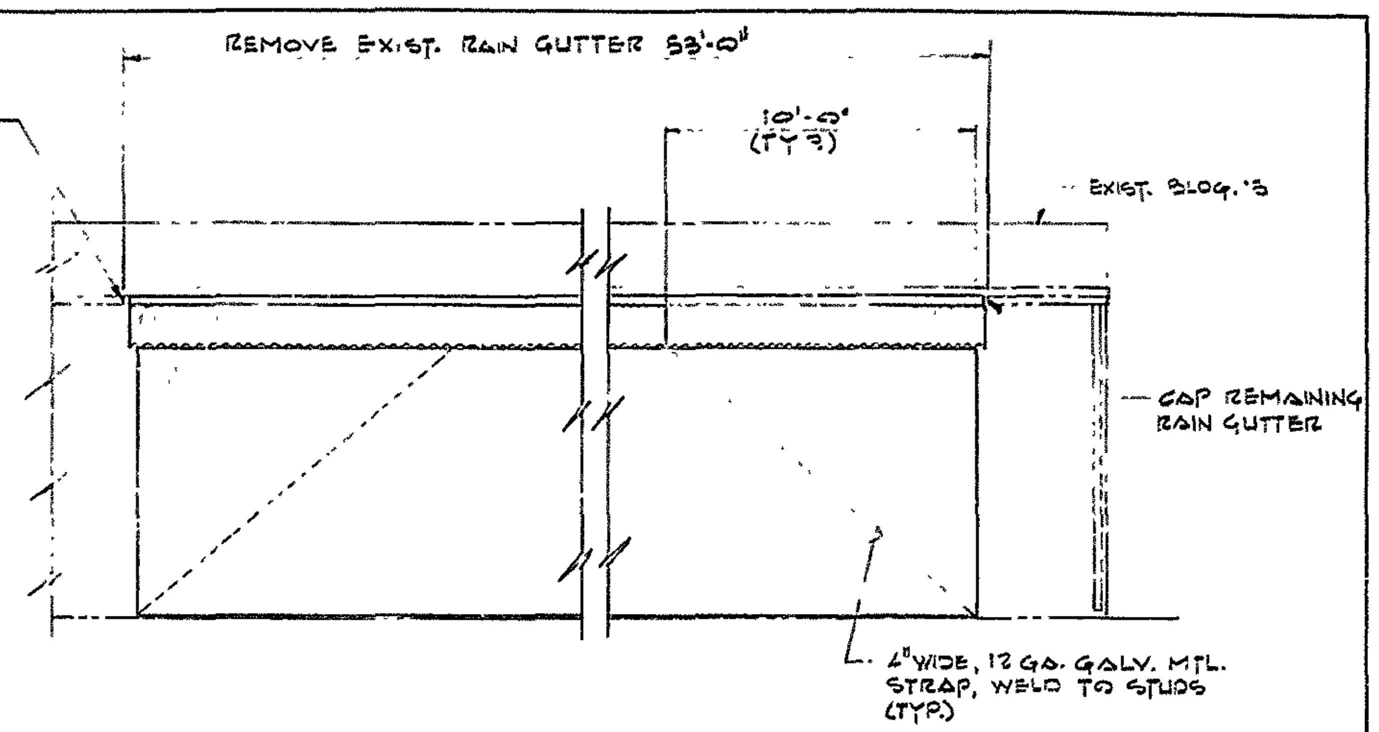
DRAWING NO. LA-MM-A3
SHEET 6

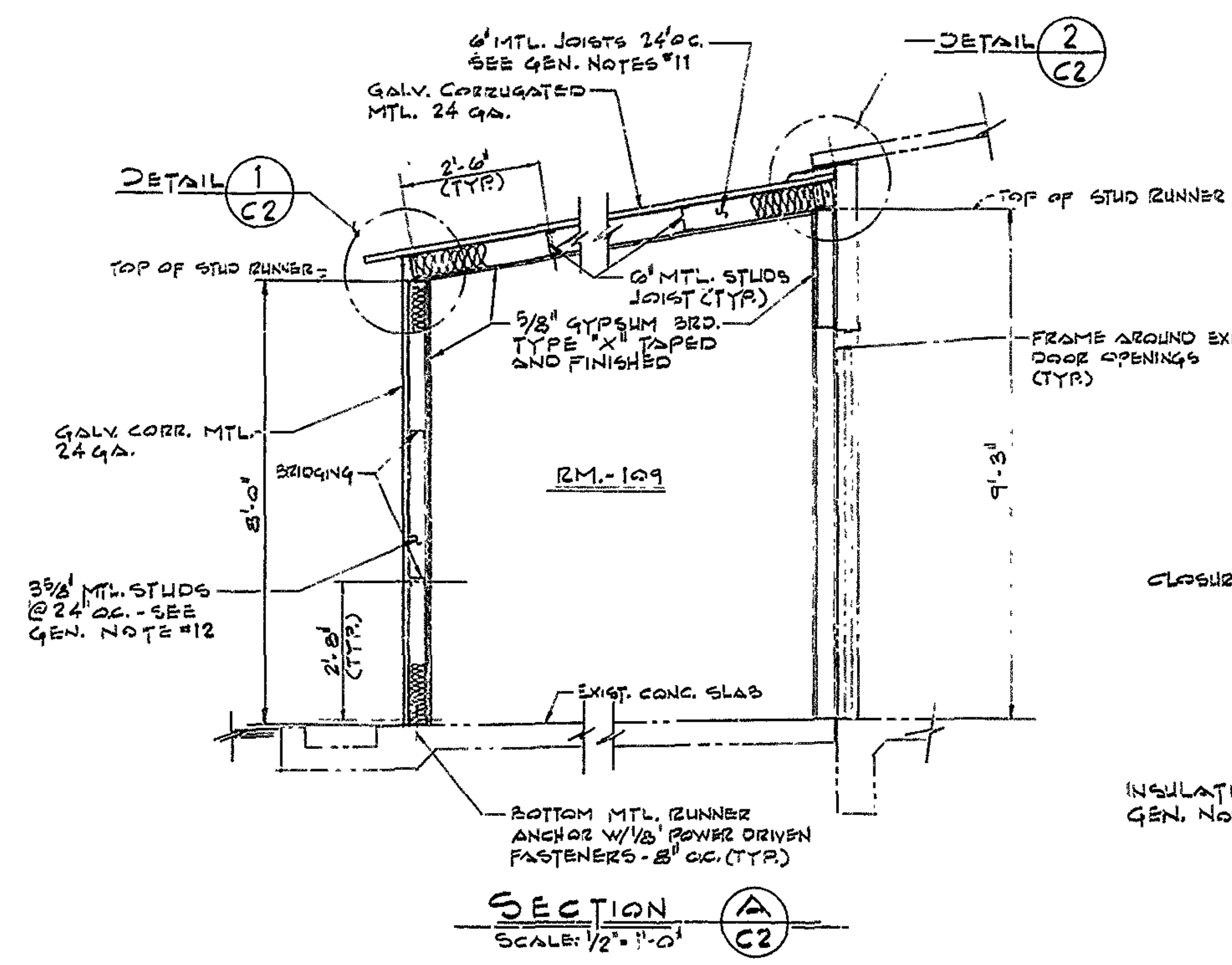
REC'D.... LOGGED.... TO VAULT

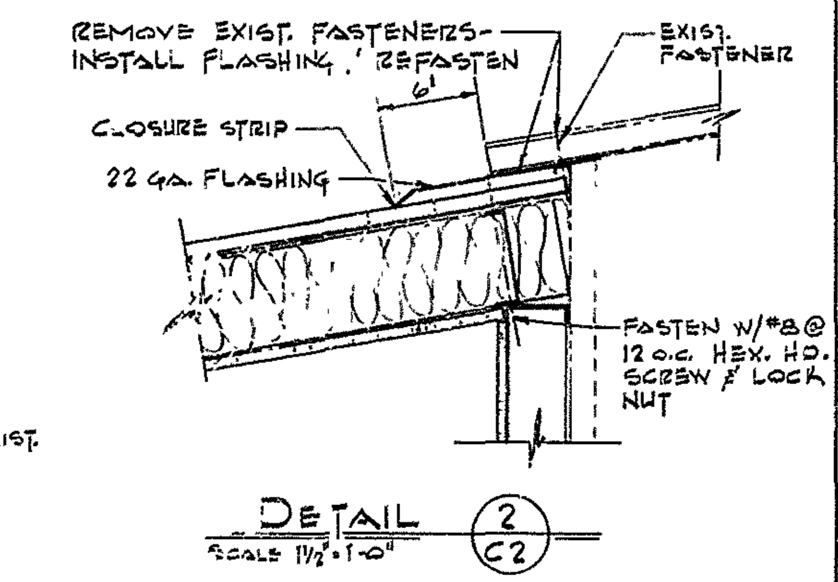
LAB JOB 4768-51 ENG C-42677

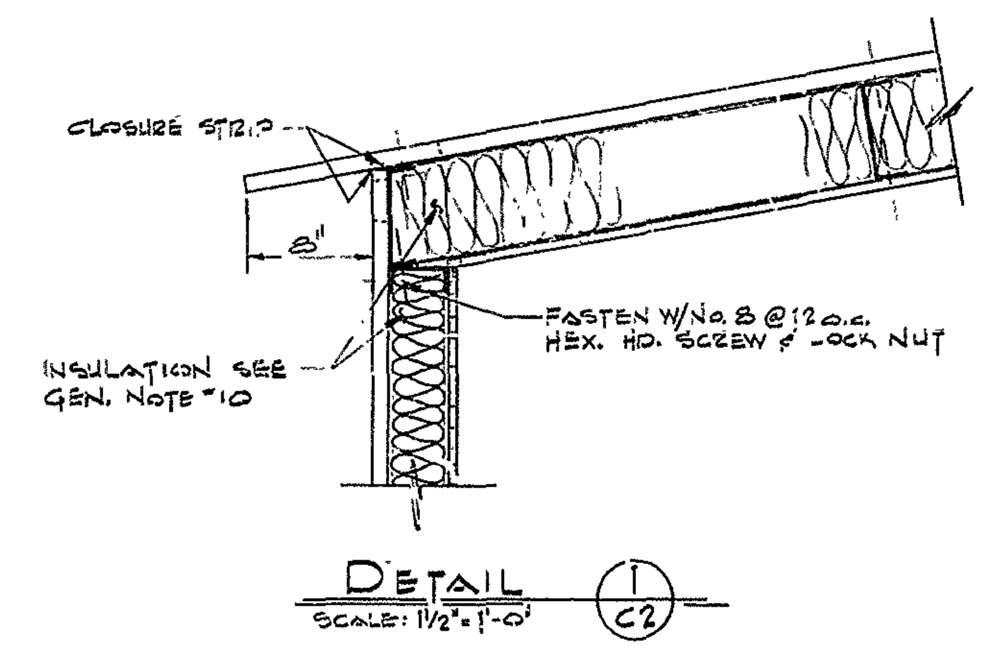


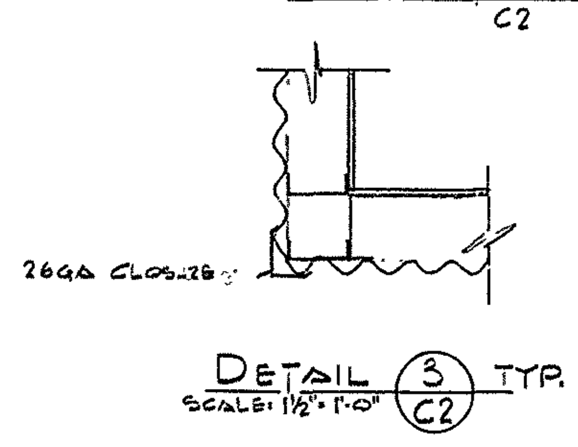












VIGIL 4938

NO	DATE	CLASS REVIEW	REVIEWER	REVISIONS	BY	CHKD	GRP	D O	ENG GP	ENGR D O	APP
1	5-15			AS-BUILT	FL						

AUTHORIZED FOR	
H-DO DIVISION	[signature]
H-4 GROUP	[signature]
H-1	N/A
H-3	DRR 36820
H-3	N/A
H-5	36821
H-7	N/A
H-7	N/A
H-8	N/A
E-1	N/A
ENG-1	36811
ENG-4	36818
ENG-11	36819
ENG-4	36817

UNITED STATES
DEPARTMENT OF ENERGY
LOS ALAMOS AREA OFFICE - LOS ALAMOS, NEW MEXICO

BUILDING ADDITION

STRUCT: PLAN, ELEVATIONS, DETAILS & SECTION

BLDG REF.-15 TA-51

CONTRACT NO. A-E	
ACCT. NO	
DRAWN	T. Montoya
DRAFT CK	[signature]
DESIGN CK	T. Montoya

A E. APPROVED	
DESIGN	T. Montoya
CHECKED	P.C. Hunt
RELEASED	P.C. Hunt
DATE	4-27-79

SUBMITTED: P.C. Hunt — RECOMMENDED: W.T. Elkins — APPROVED: [signature] 5-1-79

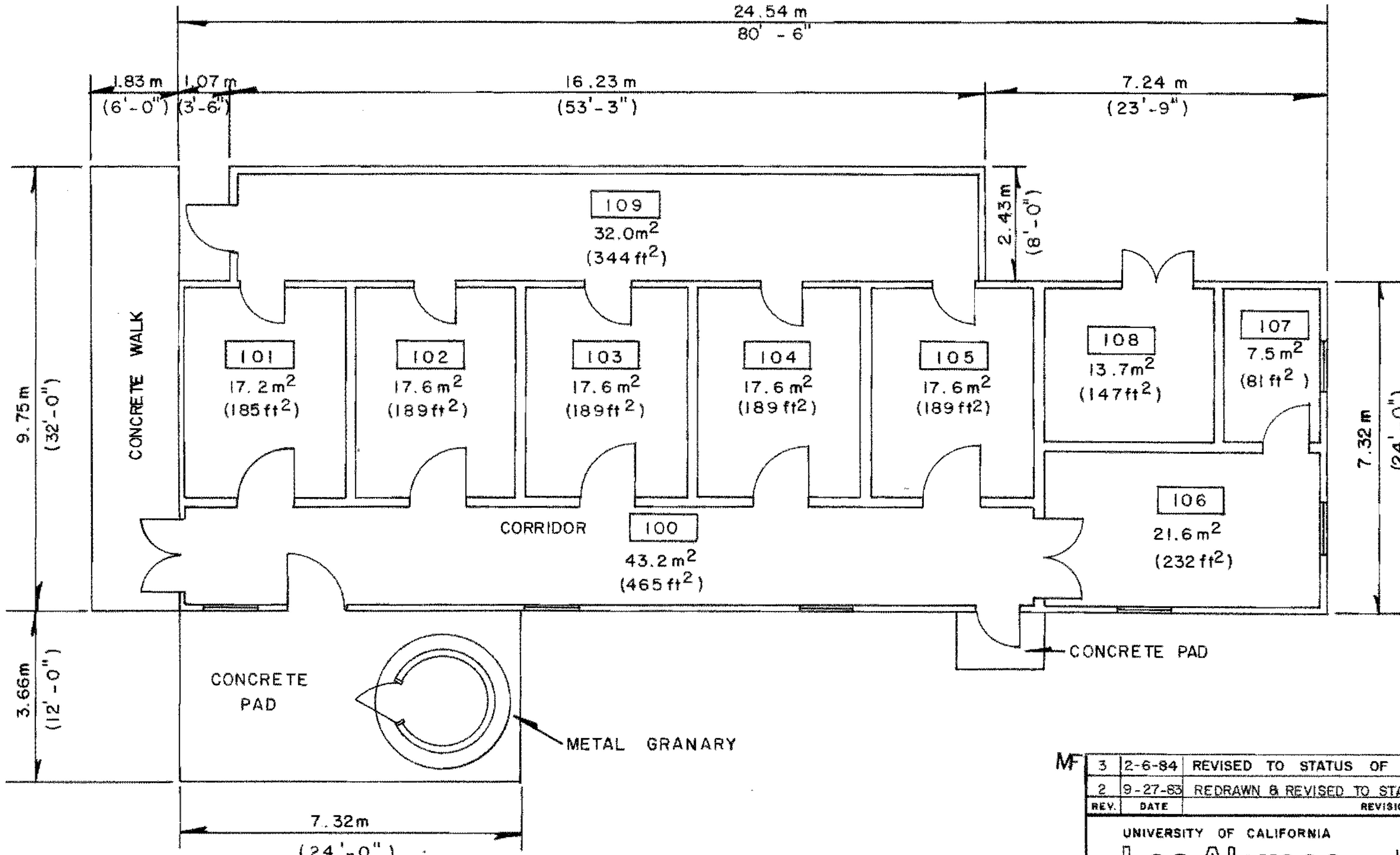
LOS ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
ENGINEERING DEPT LOS ALAMOS, N M

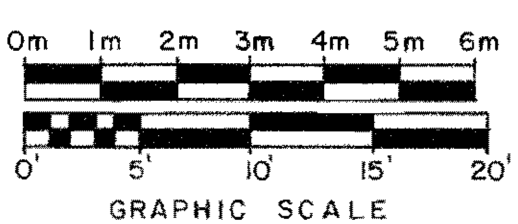
DRAWING NO — SHEET C2 — 2 OF 5

CLASSIFICATION U — REVIEWER W.T. Elkins — DATE 4-6-79

LAB JOB NO 5980-51 — LASL DWG. NO. ENG-C43557

83489





TOTALS m2 205.31 ft2 (2,210)

MF

REV.	DATE	REVISION	BY	CKD.	APP.
3	2-6-84	REVISED TO STATUS OF 2/6/84	H&N		DP
2	9-27-83	REDRAWN & REVISED TO STATUS OF 09/27/83	H&N	H&N	DP

UNIVERSITY OF CALIFORNIA
Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

FACILITIES ENGINEERING DIVISION

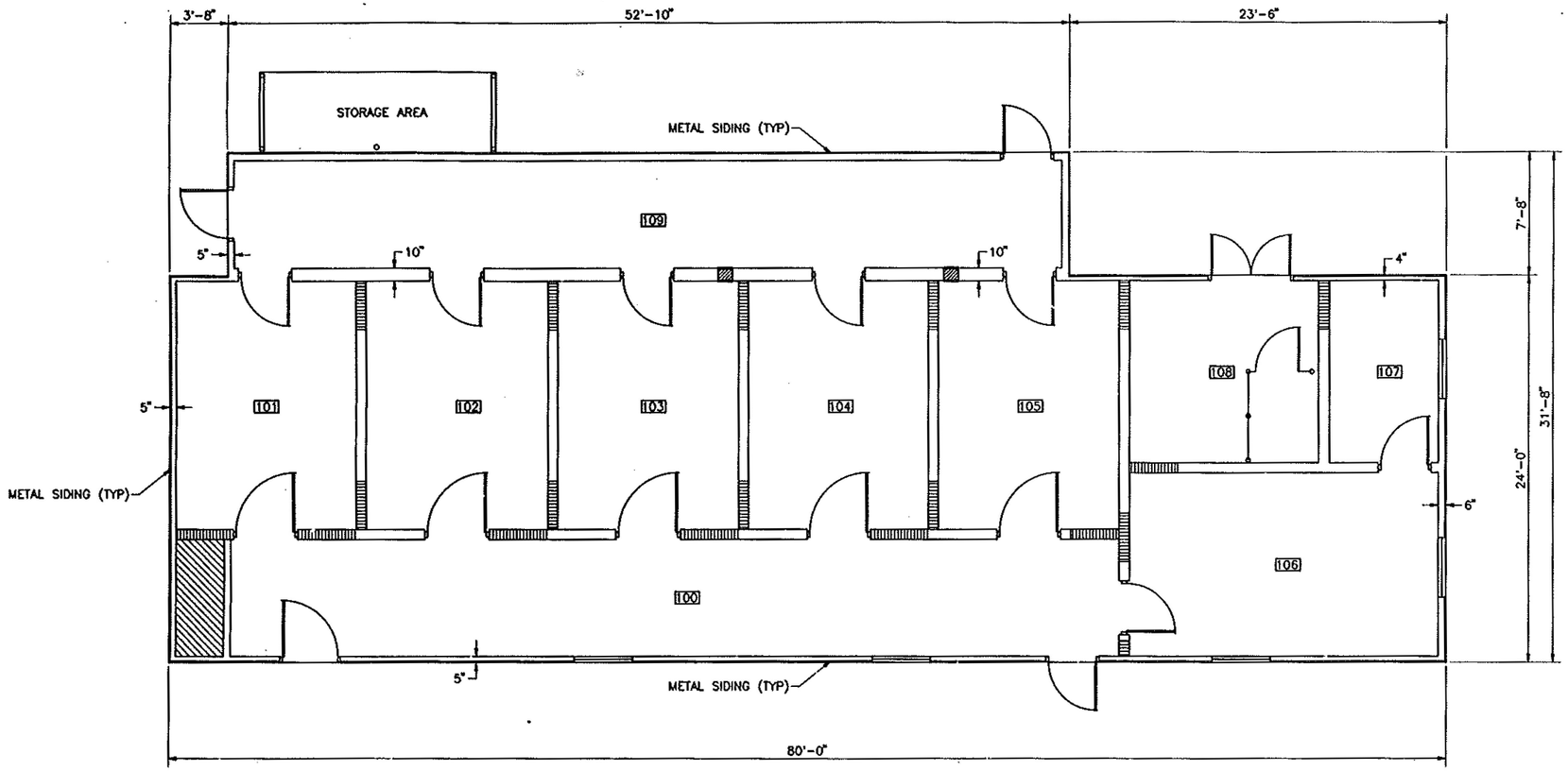
ANIMAL HOLDING FACILITY
FLOOR PLAN

BLDG. REF-15 TA-51

SEC. CLASSIFICATION
CLASS. U
REVIEWER
DATE 3-6-84

SUBMITTED E. Trujillo
RECOMMENDED
APPROVED W.T. E
DRAWN H & N
CHECKED Humble H&N
DATE 9-27-83
SHEET NO. 1 OF 1
DRAWING NO. ENG-R3372

REC'D LOGGED TO VAULT 9/30/83



RECORD FLOOR PLAN

SCALE: 1/4" = 1'-0"

4 3 2 1 0 4 8 16
GRAPHIC SCALE

N

RECD LOGGED TO VAULT

FIELD VERIFIED 8-3-95

ROOM INFORMATION CHART

RM NO	NET SQ FOOTAGE	RM NO	NET SQ FOOTAGE	RM NO	NET SQ FOOTAGE
100	426	104	192	108	145
101	186	105	191	109	368
102	193	106	230	UTILITY-1	25
103	193	107	82		

TOTAL ROOM NET SQUARE FOOTAGE (BUILDING) = 2,231

GROSS SQUARE FOOTAGE (BUILDING) = 2,324

LEGEND

- CONCRETE BLOCK
- LOUVER
- UTILITY SPACE
- WINDOW
- WOOD OR METAL STUD
- CHAIN LINK FENCE
- COLUMNS

NOTES

1. ALL EXTERIOR WALLS ARE 6" THICK UNLESS OTHERWISE NOTED.
2. ALL INTERIOR WALLS ARE 8" THICK UNLESS OTHERWISE NOTED.
3. REFERENCE DRAWING ENG-R3372.
4. ROOM NET SQUARE FOOTAGE IS COMPUTED BY MEASURING FROM THE INSIDE FACE OF EXTERIOR WALLS TO THE CENTERLINE OF ALL OTHER WALLS. AREAS SHOWN ARE ROUNDED TO THE NEAREST SQUARE FOOT.
5. GROSS SQUARE FOOTAGE IS EQUAL TO ALL FLOOR AREA (INCLUDING ALL OPENINGS IN FLOOR SLABS) MEASURED TO THE OUTER SURFACES OF EXTERIOR OR ENCLOSING WALLS, AND INCLUDES ALL FLOORS, MEZZANINES, HALLS, VESTIBULES, STAIRWELLS, SERVICE AND EQUIPMENT ROOMS, PENTHOUSES, VAULTS, AND ENCLOSED PASSAGES.
6. DIMENSIONS SHOWN ARE ROUNDED TO THE NEAREST INCH.

NO	DATE	CLASS REV	DESCRIPTION	DWN	VER	CHKD	SUB	APP

JOHNSON CONTROLS

AS-BUILT RECORD FLOOR PLAN
CHEMISTRY LAB
ARCH: RECORD FLOOR PLAN

DRAWN M. VELASQUEZ
VERIFIED M. MYERS
CHECKED C. SANDOVAL
DATE 8-17-95

BLDG 1009 TA-54

SUBMITTED JERRY FORTE

APPROVED FOR RELEASE FRED THOMPSON 9/11/95

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

SHEET 1 OF 1

CLASSIFICATION U REVIEWER T. GUSDORF DATE 8-31-95

PROJECT ID 7556

DRAWING NO AB500

REV

JCI NO 91-011

D C B A 1 5 10 A B C D